BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

SEQUENCE LISTING

<110> Gordon, Robert D
Sprengel, Jorg J
Yon, Jeffery R
Dijkmans, Josiena J.H.
Gosiewska, Anna
Dhanaraj, Sridevi N
Xu, Jean

<120> VASCULAR ENDOTHELIAL GROWTH FACTOR-X

<130> B0192.70011US00

<140> US 09/468,647
<141> 1999-12-21

<150> GB 9828377.3
<151> 1998-12-22

<150> US 60/124,967
<151> 1999-03-18

<150> US 60/164,131
<151> 1999-11-08

<160> 130

<170> PatentIn version 3.2

<210> 1
<211> 323
<212> PRT
<213> Homo sapiens

<400> 1

```
Glu Ser Asn Leu Ser Ser Lys Phe Gln Phe Ser Ser Asn Lys Glu Gln
  1               5                  10                  15

Tyr Gly Val Gln Asp Pro Gln His Glu Arg Ile Ile Thr Val Ser Thr
             20                  25                  30

Asn Gly Ser Ile His Ser Pro Arg Phe Pro His Thr Tyr Pro Arg Asn
         35                  40                  45

Thr Val Leu Val Trp Arg Leu Val Ala Val Glu Glu Asn Val Trp Ile
     50                  55                  60

Gln Leu Thr Phe Asp Glu Arg Phe Gly Leu Glu Asp Pro Glu Asp Asp
 65                  70                  75                  80

Ile Cys Lys Tyr Asp Phe Val Glu Val Glu Glu Pro Ser Asp Gly Thr
                 85                  90                  95

Ile Leu Gly Arg Trp Cys Gly Ser Gly Thr Val Pro Gly Lys Gln Ile
            100                 105                 110

Ser Lys Gly Asn Gln Ile Arg Ile Arg Phe Val Ser Asp Glu Tyr Phe
        115                 120                 125
```

```
Pro Ser Glu Pro Gly Phe Cys Ile His Tyr Asn Ile Val Met Pro Gln
    130                 135                 140

Phe Thr Glu Ala Val Ser Pro Ser Val Leu Pro Pro Ser Ala Leu Pro
145                 150                 155                 160

Leu Asp Leu Leu Asn Asn Ala Ile Thr Ala Phe Ser Thr Leu Glu Asp
                165                 170                 175

Leu Ile Arg Tyr Leu Glu Pro Glu Arg Trp Gln Leu Asp Leu Glu Asp
            180                 185                 190

Leu Tyr Arg Pro Thr Trp Gln Leu Leu Gly Lys Ala Phe Val Phe Gly
        195                 200                 205

Arg Lys Ser Arg Val Val Asp Leu Asn Leu Leu Thr Glu Glu Val Arg
    210                 215                 220

Leu Tyr Ser Cys Thr Pro Arg Asn Phe Ser Val Ser Ile Arg Glu Glu
225                 230                 235                 240

Leu Lys Arg Thr Asp Thr Ile Phe Trp Pro Gly Cys Leu Leu Val Lys
                245                 250                 255

Arg Cys Gly Gly Asn Cys Ala Cys Cys Leu His Asn Cys Asn Glu Cys
            260                 265                 270

Gln Cys Val Pro Ser Lys Val Thr Lys Lys Tyr His Glu Val Leu Gln
        275                 280                 285

Leu Arg Pro Lys Thr Gly Val Arg Gly Leu His Lys Ser Leu Thr Asp
    290                 295                 300

Val Ala Leu Glu His His Glu Glu Cys Asp Cys Val Cys Arg Gly Ser
305                 310                 315                 320

Thr Gly Gly
```

<210> 2
<211> 345
<212> PRT
<213> Homo sapiens

<400> 2

```
Met Ser Leu Phe Gly Leu Leu Leu Leu Thr Ser Ala Leu Ala Gly Gln
  1               5                  10                  15

Arg Gln Gly Thr Gln Ala Glu Ser Asn Leu Ser Ser Lys Phe Gln Phe
            20                  25                  30

Ser Ser Asn Lys Glu Gln Tyr Gly Val Gln Asp Pro Gln His Glu Arg
        35                  40                  45

Ile Ile Thr Val Ser Thr Asn Gly Ser Ile His Ser Pro Arg Phe Pro
    50                  55                  60

His Thr Tyr Pro Arg Asn Thr Val Leu Val Trp Arg Leu Val Ala Val
65                  70                  75                  80
```

```
Glu Glu Asn Val Trp Ile Gln Leu Thr Phe Asp Glu Arg Phe Gly Leu
                 85                  90                  95

Glu Asp Pro Glu Asp Asp Ile Cys Lys Tyr Asp Phe Val Glu Val Glu
            100                 105                 110

Glu Pro Ser Asp Gly Thr Ile Leu Gly Arg Trp Cys Gly Ser Gly Thr
        115                 120                 125

Val Pro Gly Lys Gln Ile Ser Lys Gly Asn Gln Ile Arg Ile Arg Phe
    130                 135                 140

Val Ser Asp Glu Tyr Phe Pro Ser Glu Pro Gly Phe Cys Ile His Tyr
145                 150                 155                 160

Asn Ile Val Met Pro Gln Phe Thr Glu Ala Val Ser Pro Ser Val Leu
                165                 170                 175

Pro Pro Ser Ala Leu Pro Leu Asp Leu Leu Asn Asn Ala Ile Thr Ala
            180                 185                 190

Phe Ser Thr Leu Glu Asp Leu Ile Arg Tyr Leu Glu Pro Glu Arg Trp
        195                 200                 205

Gln Leu Asp Leu Glu Asp Leu Tyr Arg Pro Thr Trp Gln Leu Leu Gly
    210                 215                 220

Lys Ala Phe Val Phe Gly Arg Lys Ser Arg Val Val Asp Leu Asn Leu
225                 230                 235                 240

Leu Thr Glu Glu Val Arg Leu Tyr Ser Cys Thr Pro Arg Asn Phe Ser
                245                 250                 255

Val Ser Ile Arg Glu Glu Leu Lys Arg Thr Asp Thr Ile Phe Trp Pro
            260                 265                 270

Gly Cys Leu Leu Val Lys Arg Cys Gly Gly Asn Cys Ala Cys Cys Leu
        275                 280                 285

His Asn Cys Asn Glu Cys Gln Cys Val Pro Ser Lys Val Thr Lys Lys
    290                 295                 300

Tyr His Glu Val Leu Gln Leu Arg Pro Lys Thr Gly Val Arg Gly Leu
305                 310                 315                 320

His Lys Ser Leu Thr Asp Val Ala Leu Glu His His Glu Glu Cys Asp
                325                 330                 335

Cys Val Cys Arg Gly Ser Thr Gly Gly
            340                 345
```

<210> 3
<211> 1035
<212> DNA
<213> Homo sapiens

<400> 3
atgagcctct tcgggcttct cctgctgaca tctgccctgg ccggccagag acaggggact 60

caggcggaat ccaacctgag tagtaaattc cagttttcca gcaacaagga acagaacgga 120

gtacaagatc ctcagcatga gagaattatt actgtgtcta ctaatggaag tattcacagc 180

ccaaggtttc ctcatactta tccaagaaat acggtcttgg tatggagatt agtagcagta 240

gaggaaaatg tatggataca acttacgttt gatgaaagat ttgggcttga agacccagaa 300

gatgacatat gcaagtatga ttttgtagaa gttgaggaac ccagtgatgg aactatatta 360

gggcgctggt gtggttctgg tactgtacca ggaaaacaga tttctaaagg aaatcaaatt 420

aggataagat ttgtatctga tgaatatttt ccttctgaac cagggttctg catccactac 480

aacattgtca tgccacaatt cacagaagct gtgagtcctt cagtgctacc cccttcagct 540

ttgccactgg acctgcttaa taatgctata actgccttta gtaccttgga agaccttatt 600

cgatatcttg aaccagagag atggcagttg gacttagaag atctatatag gccaacttgg 660

caacttcttg gcaaggcttt tgtttttgga agaaaatcca gagtggtgga tctgaacctt 720

ctaacagagg aggtaagatt atacagctgc acacctcgta acttctcagt gtccataagg 780

gaagaactaa agagaaccga taccattttc tggccaggtt gtctcctggt taaacgctgt 840

ggtgggaact gtgcctgttg tctccacaat tgcaatgaat gtcaatgtgt cccaagcaaa 900

gttactaaaa aataccacga ggtccttcag ttgagaccaa agaccggtgt caggggattg 960

cacaaatcac tcaccgacgt ggccctggag caccatgagg agtgtgactg tgtgtgcaga 1020

gggagcacag gagga 1035

<210> 4
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 4
aaaatgtatg gatacaactt ac 22

<210> 5
<211> 23
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 5
gtttgatgaa agatttgggc ttg 23

<210> 6
<211> 22
<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 6
tttctaaagg aaatcaaatt ag 22

<210> 7
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 7
gataagattt gtatctgatg 20

<210> 8
<211> 17
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 8
gatgtctcct ctttcag 17

<210> 9
<211> 18
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 9
gcacaactcc taattctg 18

<210> 10
<211> 18
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 10
agcacctgat tccgttgc 18

<210> 11
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 11
tagtacatag aatgttctgg 20

<210> 12
<211> 19
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 12
aagagacata cttctgtac 19

<210> 13
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 13
ccaggtacaa taagtgaact g 21

<210> 14
<211> 28
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 14
cctttagaaa tctgttttcc tggtacag 28

<210> 15
<211> 31
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 15
ggaaaatatt catcagatac aaatcttatc c 31

<210> 16
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 16
ggtccagtgg caaagctgaa gg 22

<210> 17
<211> 29
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 17
ctggttcaag atatcgaata aggtcttcc 29

<210> 18
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 18
tttgtttaaa ccttgggaaa ctgg 24

<210> 19
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 19
gtccaggttt tgctttgatc c 21

<210> 20
<211> 30
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 20
aattggatcc gagagtggtg gatctgaacc 30

<210> 21
<211> 30
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 21
aattggatcc gggaagaaaa tccagagtgg 30

<210> 22
<211> 40
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 22
ggttgaattc attatttttt agtaactttg cttgggacac 40

<210> 23
<211> 31
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 23
aattgaattc attatcctcc tgtgctccct c 31

<210> 24
<211> 60
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 24
aattggatcc ggagtctcac catcaccacc atcatgaatc caacctgagt agtaaattcc 60

<210> 25
<211> 34
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 25
aattgaattc gctatcctcc tgtgctccct ctgc 34

<210> 26
<211> 111
<212> PRT
<213> Homo sapiens

<400> 26
Gly Val Gln Asp Pro Gln His Glu Arg Ile Ile Thr Val Ser Thr Asn
1 5 10 15

Gly Ser Ile His Ser Pro Arg Phe Pro His Thr Tyr Pro Arg Asn Thr
20 25 30

Val Leu Val Trp Arg Leu Val Ala Val Glu Glu Asn Val Trp Ile Gln
35 40 45

Leu Thr Phe Asp Glu Arg Phe Gly Leu Glu Asp Pro Glu Asp Asp Ile
50 55 60

Cys Lys Tyr Asp Phe Val Glu Val Glu Glu Pro Ser Asp Gly Thr Ile
65 70 75 80

Leu Gly Arg Trp Cys Gly Ser Gly Thr Val Pro Gly Lys Gln Ile Ser
85 90 95

Lys Gly Asn Gln Ile Arg Ile Arg Phe Val Ser Asp Glu Tyr Phe
100 105 110

<210> 27
<211> 168
<212> PRT
<213> Homo sapiens

<400> 27
Met Ala Met Asp Ile Gly Ile Asn Ser Asp Pro Glu Ser His His His
1 5 10 15

His His His Glu Ser Asn Leu Ser Ser Lys Phe Gln Phe Ser Ser Asn
20 25 30

Lys Glu Gln Asn Gly Val Gln Asp Pro Gln His Glu Arg Ile Ile Thr
35 40 45

Val Ser Thr Asn Gly Ser Ile His Ser Pro Arg Phe Pro His Thr Tyr
50 55 60

Pro Arg Asn Thr Val Leu Val Trp Arg Leu Val Ala Val Glu Glu Asn
65 70 75 80

Val Trp Ile Gln Leu Thr Phe Asp Glu Arg Phe Gly Leu Glu Asp Pro
85 90 95

Glu Asp Asp Ile Cys Lys Tyr Asp Phe Val Glu Val Glu Glu Pro Ser
100 105 110

```
Asp Gly Thr Ile Leu Gly Arg Trp Cys Gly Ser Gly Thr Val Pro Gly
        115                 120                 125

Lys Gln Ile Ser Lys Gly Asn Gln Ile Arg Ile Arg Phe Val Ser Asp
    130                 135                 140

Glu Tyr Phe Pro Ser Glu Pro Gly Phe Cys Ile His Tyr Asn Ile Val
145                 150                 155                 160

Met Pro Gln Phe Thr Glu Ala Val
                165
```

<210> 28
<211> 504
<212> DNA
<213> Homo sapiens

<400> 28
atggccatgg atatcggaat taattcggat ccggagtctc accatcacca ccatcatgaa 60

tccaacctga gtagtaaatt ccagttttcc agcaacaagg aacagaacgg agtacaagat 120

cctcagcatg agagaattat tactgtgtct actaatggaa gtattcacag cccaaggttt 180

cctcatactt atccaagaaa tacggtcttg gtatggagat tagtagcagt agaggaaaat 240

gtatggatac aacttacgtt tgatgaaaga tttgggcttg aagacccaga agatgacata 300

tgcaagtatg attttgtaga agttgaggaa cccagtgatg gaactatatt agggcgctgg 360

tgtggttctg gtactgtacc aggaaaacag atttctaaag gaaatcaaat taggataaga 420

tttgtatctg atgaatattt tccttctgaa ccagggttct gcatccacta caacattgtc 480

atgccacaat tcacagaagc tgtg 504

<210> 29
<211> 132
<212> PRT
<213> Homo sapiens

<400> 29
```
Asp Leu Tyr Arg Pro Thr Trp Gln Leu Leu Gly Lys Ala Phe Val Phe
  1               5                  10                  15

Gly Arg Lys Ser Arg Val Val Asp Leu Asn Leu Leu Thr Glu Glu Val
             20                  25                  30

Arg Leu Tyr Ser Cys Thr Pro Arg Asn Phe Ser Val Ser Ile Arg Glu
         35                  40                  45

Glu Leu Lys Arg Thr Asp Thr Ile Phe Trp Pro Gly Cys Leu Leu Val
     50                  55                  60

Lys Arg Cys Gly Gly Asn Cys Ala Cys Cys Leu His Asn Cys Asn Glu
 65                  70                  75                  80

Cys Gln Cys Val Pro Ser Lys Val Thr Lys Lys Tyr His Glu Val Leu
                 85                  90                  95
```

Gln Leu Arg Pro Lys Thr Gly Val Arg Gly Leu His Lys Ser Leu Thr
100 105 110

Asp Val Ala Leu Glu His His Glu Glu Cys Asp Cys Val Cys Arg Gly
115 120 125

Ser Thr Gly Gly
130

<210> 30
<211> 300
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (41) (41)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (293) (293)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 30
cacaaatcac tcaccgacgt ggccctggag caccatgagg ngtgtgactg tgtgtgcaga 60

gggagcacag gaggatagcc gcatcaccac cagcagctct tgcccagagc tgtgcagtgc 120

agtggctgat tctattagag aacgtatgcg ttatctccat ccttaatctc agttgtttgc 180

ttcaaggacc tttcatcttc aggatttaca gtgcattctg aaagaggaga catcaaacag 240

aattaggagt tgtgcaacag ctcttttgag aggaggctaa aggacaggag aanaggtctt 300

<210> 31
<211> 284
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Human EST

<400> 31
tgcagtgcag tggctgattc tattagagaa cgtatgcgtt atctccatcc ttaatctcag 60

ttgtttgctt caaggacctt tcatcttcag gatttacagt gcattctgaa agaggagaca 120

tcaaacagaa ttaggagttg tgcaacagct cttttgagag gaggcctaaa ggacaggaga 180

aaaggtcttc aatcgtggaa agaaaattaa atgttgtatt aaatagatca ccagctagtt 240

tcagagttac catgtacgta ttccactagc tgggttctgt attt 284

<210> 32
<211> 275

<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 32
cacgaggtcc ttcagttgag accaaagacc ggtgtcaggg gattgcacaa atcactcacc 60

gacgtggccc tggagcacca tgaggagtgt gactgtgtgt gcagagggag cacaggggga 120

tagccgcatc accaccagca gctcttgccc agagctgtgc agtgcagtgg ctgattctat 180

tagagaacgt atgcgttatc tccatcctta atctcagttg tttgcttcaa ggacctttca 240

tcttcaggat ttacagtgca ttctgaaaga ggaga 275

<210> 33
<211> 278
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<222> (248) (248)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 33
ggaggatagc cgcatcacca ccagcagctc ttgcccagag ctgtgcagtg cagtggctga 60

ttctattaga gaacgtatgc gttatctcca tccttaatct cagttgtttg cttcaaggac 120

ctttcatctt caggatttac agtgcattct gaaagaggag acatcaaaca gaattaggag 180

ttgtgcaaca gctcttttga gaggaggcct aaaggacagg agaaaaggtc ttcaatcgtg 240

gaaagaanat taaatgttgt attaaataga caccagct 278

<210> 34
<211> 275
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 34
ggaggatagc cgcatcacca ccagcagctc ttgcccagag ctgtgcagtg cagtggctga 60

ttctattaga gaacgtatgc gttatctcca tccttaatct cagttgtttg cttcaaggac 120

ctttcatctt caggatttac atgcattctg aaagaggaga catcaaacag aattaggagt 180

tgtgcaacag ctcttttgag aggaggccta aaggacagga gaaaaggtct tcaatcgtgg 240

aaagaaaatt aaatgttgta ttaaatagat cacca 275

<210> 35
<211> 261
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 35
gagaaccgat accattttct ggccaggttg tctcctggtt aaacgctgtg gtgggaactg 60

tgcctgttgt ctccacaatt gcaatgaatg tcaatgtgtc ccaagcaaag ttactaaaaa 120

ataccacgag gtccttcagt tgagaccaaa gaccggtgtc aggggattgc acaaatcact 180

caccgacgtg gccctggagc accatgagga gtgtgactgt gtgtgcagag ggagcacagg 240

aggatagccg catcaccacc a 261

<210> 36
<211> 279
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 36
agaaaatcca gagtggtgga tctgaacctt ctaacagagg aggtaagatt atacagctgc 60

acacctcgta acttctcagt gtccataagg gaagaactaa agagaaccga taccattttc 120

tggccaggtt gtctcctggt taaacgctgt ggtgggaact gtgcctgttg tctccacaat 180

tgcaatgaat gtcaatgtgt cccaagcaaa gttactaaaa aataccacga ggtccttcag 240

ttgagaccaa agaccggtgt caggggattg cacaaatca 279

<210> 37
<211> 262
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 37
aggaaatcaa attaggataa gatttgtatc tgatgaatat tttccttctg aaccttctaa 60

cagaggaggt aagattatac agctgcacac ctcgtaactt ctcagtgtcc ataagggaag 120

aactaaagag aaccgatacc attttctggc caggttgtct cctggttaaa cgctgtggtg 180

ggaactgtgc ctgttgtctc ccacaattgc aatgaatgtc aatgtgtccc aagcaaagtt 240

actaaaaaat accacgaggt cc 262

<210> 38
<211> 289
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (35) (35)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (51) (51)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (125) (125)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 38
atttcatctt caggatttac agtgcattct gaaanaggag aaatcaaaca naattaggag 60

ttgtgcaaca gctcttttga gaggaggcct aaaggacagg agaaaaggtc ttcaatcgtg 120

gaaanaaaat taaatgttgt attaaataga tcaccagcta gtttcagagt taccatgtac 180

gtattccact agctgggttc tgtatttcag ttctttcgat acggcttagg gtaatgtcag 240

tacaggaaaa aaactgtgca agtgagcacc tgattccgtt gccttgctt 289

<210> 39
<211> 245
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 39
caaagttact aaaaaatacc acgaggtcct tcagttgaga ccaaagaccg gtgtcagggg 60

attgcacaaa tcactcaccg acgtggccct ggagcaccat gaggagtgtg actgtgtgtg 120

cagagggagc acaggaggat agccgcatca ccaccagcag ctcttgccca gagctgtgca 180

gtgcagtggc tgattctatt agagaacgta tgcgttatct ccatccttaa tctcagttgt 240

ttgct 245

<210> 40
<211> 247
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature

<222> (2) (2)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (86) (86)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (191) (191)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 40
angagttgcc cagagctgtg cagtgcagtg gctgattcta ttagagaacg tatgcgttat 60

ctccatcctt aatctcagtt gtttgnttca aggacctttc atcttcagga tttacagtgc 120

attctgaaag aggagacatc aaacagaatt aggagttgtg caacagctct tttgagagga 180

ggcctaaagg ncaggagaaa aggtcttcaa tcgtggaaag aaaattaaat gttgtattaa 240

atagatc 247

<210> 41
<211> 232
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 41
aggaaatcaa attaggataa gatttgtatc tgatgaatat tttccttctg aaccttctaa 60

cagaggaggt aagattatac agctgcacac ctcgtaactt ctcagtgtcc ataagggaag 120

aactaaagag aaccgatacc attttctggc caggttgtct cctggttaaa cgctgtggtg 180

ggaactgtgc ctgttgtctc cacaattgca atgaatgtca atgtgtccca ag 232

<210> 42
<211> 253
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 42
gtgcattctg aaagaggaga catcaaacag aattaggagt tgtgcaacag ctcttttgag 60

aggaggccta aaggacagga gaaaaggtct tcaatcgtgg aaagaaaatt aaatgttgta 120

ttaaatagat caccagctag tttcagagtt accatgtacg tattccacta gctgggttct 180

gtatttcagt tctttcgata cggcttaggg taatgtcagt acaggaaaaa aactgtgcaa 240

gtgagcacct gat 253

<210> 43
<211> 265
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (238) (238)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (246) (247)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (252) (252)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (257) (257)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 43
tgcaacagct cttttgagag gaggcctaaa ggacaggaga aaaggtcttc aatcgtggaa 60

agaaaattaa atgttgtatt aaatagatca ccagctagtt tcagagttac catgtacgta 120

ttccactagc tgggttctgt atttcagttc tttcgatacg gcttagggta atgtcagtac 180

aggaaaaaaa ctgtgcaagt gagcacctga ttccgttgcc ttgcttaacc ctaaagcncc 240

atgtcnnggg cnaaaancga aaaat 265

<210> 44
<211> 291
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (61) (61)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (66) (66)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (88) (88)

<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (141) (141)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (155) (155)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (172) (172)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (177) (177)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (227) (227)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (229) (229)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (274) (274)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 44
ccttaatctc agttgtttgc ttcaaggacc tttcatcttc aggatttaca gtgcattctg 60

naagangaga catcaaacag aattaggngt tgtgcaaaag ctcttttgag aggaggccta 120

aaggacagga gaaaaggtct ncaatcgtgg aaagnaaatt aaatgttgta tnaaatngat 180

caccagctag tttcagagtt accatgtacg tattccacta gctgggncng tattcagtct 240

ttcggaacgg cttagggtaa tgtcagtaca gganaaaaac tgtgcagtga g 291

<210> 45
<211> 279
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (205) (205)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (240) (240)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (254) (254)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 45
attaaataga tcaccagcta gtttcagagt taccatgtac gtattccact agctgggttc 60

tgtatttcag ttctttcgat acggcttagg gtaatgtcag tacaggaaaa aaactgtgca 120

agtgagcacc tgattccgtt gccttggctt aactctaaag ctccatgtcc tgggcctaaa 180

atcgtataaa atctggattt ttttnttttt ttttgcgcat attcacatat gtaaaccagn 240

acattctatg tacnacaaac ctggttttta aaaaggaac 279

<210> 46
<211> 181
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 46
ggctagtttc agagttacca tgtacgtatt ccactagctg ggttctgtat ttcagttctt 60

tcgatacggc ttagggtaat gtcagtacag gaaaaaaact gtgcaagtga gcacctgatt 120

ccgttgcctt gcttaactct aaagctccat gtcctgggcc taaaatcgta taaaatctgg 180

a 181

<210> 47
<211> 184
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (54) (54)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 47
aatagatcac cagctagttt cagagttacc atgtacgtat tccactagct gggntctgta 60

tttcagttcc tttcgatacg gcttagggta atgtcagtac aggaaaaaag ctgtgcaagt 120

gagcacctga ttccgttgcc ttgcttaact ctaaagctcc atgtcctggg cctaaaatcg 180

tata 184

<210> 48
<211> 290
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 48
aaaggaacta tgttgctatg aattaaactt gtgtcgtgct gataggacag actggatttt 60

tcatatttct tattaaaatt tctgccattt agaagaagag aactacattc atggtttgga 120

agagataaac ctgaaaagaa gagtggcctt atcttcactt tatcgataag tcagtttatt 180

tgtttcattg tgtacatttt tatattctcc ttttgacatt ataactgttg gcttttctaa 240

tcttgttaaa tatatctatt tttaccaaag gtatttaata ttctttttta 290

<210> 49
<211> 300
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (41) (41)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (293) (293)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 49
cacaaatcac tcaccgacgt ggccctggag caccatgagg ngtgtgactg tgtgtgcaga 60

gggagcacag gaggatagcc gcatcaccac cagcagctct tgcccagagc tgtgcagtgc 120

agtggctgat tctattagag aacgtatgcg ttatctccat ccttaatctc agttgtttgc 180

ttcaaggacc tttcatcttc aggatttaca gtgcattctg aaagaggaga catcaaacag 240

aattaggagt tgtgcaacag ctcttttgag aggaggctaa aggacaggag aanaggtctt 300

<210> 50
<211> 284
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 50
tgcagtgcag tggctgattc tattagagaa cgtatgcgtt atctccatcc ttaatctcag 60

ttgtttgctt caaggacctt tcatcttcag gatttacagt gcattctgaa agaggagaca 120

tcaaacagaa ttaggagttg tgcaacagct cttttgagag gaggcctaaa ggacaggaga 180

aaaggtcttc aatcgtggaa agaaaattaa atgttgtatt aaatagatca ccagctagtt 240

tcagagttac catgtacgta ttccactagc tgggttctgt attt 284

<210> 51
<211> 301
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (47) (47)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (253) (253)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 51
cttgttaaat atatctattt ttaccaaagg tatttaatat tctttantta tgacaactta 60

gatcaactat ttttagcttg gtaaattttt ctaaacacaa ttgttatagc cagaggaaca 120

aagatgatat aaaatattgt tgctctgaca aaaatacatg tatttcattc tcgtatggtg 180

ctagagttag attaatctgc attttaaaaa actgaattgg aatagaattg gtaagttgca 240

aagacttttt ganaataatt aaattatcat atcttccatt cctgttattg ggggagaaaa 300

t 301

<210> 52
<211> 275
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 52
cacgaggtcc ttcagttgag accaaagacc ggtgtcaggg gattgcacaa atcactcacc 60

gacgtggccc tggagcacca tgaggagtgt gactgtgtgt gcagagggag cacaggggga 120

tagccgcatc accaccagca gctcttgccc agagctgtgc agtgcagtgg ctgattctat 180

tagagaacgt atgcgttatc tccatcctta atctcagttg tttgcttcaa ggacctttca 240

tcttcaggat ttacagtgca ttctgaaaga ggaga 275

<210> 53
<211> 288
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 53
ttaaaaagga actatgttgc tatgaattaa acttgtgtca tgctgatagg acagactgga 60

tttttcatat ttcttattaa aatttctgcc atttagaaga agagaactac attcatggtt 120

tggaagagat aaacctgaaa agaagagtgg ccttatcttc actttatcga taagtcagtt 180

tatttgtttc attgtgtaca tttttatatt ctccttttga cattataact gttggctttc 240

taatctgtta aatatatcta tttttaccaa aggtatttaa tattcttt 288

<210> 54
<211> 278
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 54
ggaggatagc cgcatcacca ccagcagctc ttgcccagag ctgtgcagtg cagtggctga 60

ttctattaga gaacgtatgc gttatctcca tccttaatct cagttgtttg cttcaaggac 120

ctttcatctt caggatttac agtgcattct gaaagaggag acatcaaaca gaattaggag 180

ttgtgcaaca gctcttttga gaggaggcct aaaggacagg agaaaaggtc ttcaatcgtg 240

gaaagaanat taaatgttgt attaaataga caccagct 278

<210> 55
<211> 275
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 55
ggaggatagc cgcatcacca ccagcagctc ttgcccagag ctgtgcagtg cagtggctga 60

ttctattaga gaacgtatgc gttatctcca tccttaatct cagttgtttg cttcaaggac 120

ctttcatctt caggatttac atgcattctg aaagaggaga catcaaacag aattaggagt 180

tgtgcaacag ctcttttgag aggaggccta aaggacagga gaaaaggtct tcaatcgtgg 240

aaagaaaatt aaatgttgta ttaaatagat cacca 275

<210> 56
<211> 261
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 56
gagaaccgat accattttct ggccaggttg tctcctggtt aaacgctgtg gtgggaactg 60

tgcctgttgt ctccacaatt gcaatgaatg tcaatgtgtc ccaagcaaag ttactaaaaa 120

ataccacgag gtccttcagt tgagaccaaa gaccggtgtc aggggattgc acaaatcact 180

caccgacgtg gccctggagc accatgagga gtgtgactgt gtgtgcagag ggagcacagg 240

aggatagccg catcaccacc a 261

<210> 57
<211> 279
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 57
agaaaatcca gagtggtgga tctgaacctt ctaacagagg aggtaagatt atacagctgc 60

acacctcgta acttctcagt gtccataagg gaagaactaa agagaaccga taccattttc 120

tggccaggtt gtctcctggt taaacgctgt ggtgggaact gtgcctgttg tctccacaat 180

tgcaatgaat gtcaatgtgt cccaagcaaa gttactaaaa aataccacga ggtccttcag 240

ttgagaccaa agaccggtgt caggggattg cacaaatca 279

<210> 58
<211> 259
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 58
agatgatata aaatattgtt gctctgacaa aaatacatgt atttcattct cgtatggtgc 60

tagagttaga ttaatctgca ttttaaaaaa ctgaattgga atagaattgg taagttgcaa 120

agacttttg aaaataatta aattatcata tcttccattc ctgttattgg agatgaaaat 180

aaaaagcaac ttatgaaagt agacattcag atccagccat tactaaccta ttccttttt 240

ggggaaatct gagcctagc 259

<210> 59
<211> 284
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 59
tttttaaaaa ggaactatgt tgctatgaat taaacttgtg tcgtgctgat aggacagact 60

ggatttttca tatttcttat taaaatttct gccatttaga agaagagaac tacattcatg 120

gtttggaaga gataaacctg aaaagaagag tggcctatct tcactttatc gataagtcag 180

tttatttgtt tcattgtgta cattttttata ttctcctttg acatataact gttggctttt 240

ctaatctgtt aaatatatct atttttacca aaggtattta atat 284

<210> 60
<211> 262
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 60
aggaaatcaa attaggataa gatttgtatc tgatgaatat tttccttctg aaccttctaa 60

cagaggaggt aagattatac agctgcacac ctcgtaactt ctcagtgtcc ataagggaag 120

aactaaagag aaccgatacc attttctggc caggttgtct cctggttaaa cgctgtggtg 180

ggaactgtgc ctgttgtctc ccacaattgc aatgaatgtc aatgtgtccc aagcaaagtt 240

actaaaaaat accacgaggt cc 262

<210> 61
<211> 289
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<222> (35) (35)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (51) (51)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (125) (125)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 61
atttcatctt caggatttac agtgcattct gaaanaggag aaatcaaaca naattaggag 60

ttgtgcaaca gctcttttga gaggaggcct aaaggacagg agaaaaggtc ttcaatcgtg 120

gaaanaaaat taaatgttgt attaaataga tcaccagcta gtttcagagt taccatgtac 180

gtattccact agctgggttc tgtatttcag ttctttcgat acggcttagg gtaatgtcag 240

tacaggaaaa aaactgtgca agtgagcacc tgattccgtt gccttgctt 289

<210> 62
<211> 251
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (10) (10)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (246) (246)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 62
ttagcttggn aaatttttct aaacacaatt gttatagcca gaggaacaaa gatgatataa 60

aatattgttg ctctgacaaa aatacatgta tttcattctc gtatggtgct agagttagat 120

taatctgcat tttaaaaaac tgaattggaa tagaattggt aagttgcaaa gacttttga 180

aaataattaa attatcatat cttccattcc tgttattgga gatgaaaata aaaagcaact 240

tatganagta g 251

<210> 63
<211> 252
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (250) (250)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 63
ctttttttatg acaacttaga tcaactattt ttagcttggt aaatttttct aaacacaatt 60

gttatagcca gaggaacaaa gatgatataa aatattgttg ctctgacaaa aatacatgta 120

tttcattctc gtatggtgct agagttagat taatctgcat tttaaaaaac tgaattggaa 180

tagaattggt aagttgcaaa ggctttttga aaataattaa attatcatat cttccattcc 240

tgttattggn gg 252

<210> 64
<211> 245
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 64
caaagttact aaaaaatacc acgaggtcct tcagttgaga ccaaagaccg gtgtcagggg 60

attgcacaaa tcactcaccg acgtggccct ggagcaccat gaggagtgtg actgtgtgtg 120

cagagggagc acaggaggat agccgcatca ccaccagcag ctcttgccca gagctgtgca 180

gtgcagtggc tgattctatt agagaacgta tgcgttatct ccatccttaa tctcagttgt 240

ttgct 245

<210> 65
<211> 245
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 65
agataaacct gaaaagaaga gtggccttat cttcacttta tcgataagtc agtttatttg 60

tttcattgtg tacattttta tattctcctt ttgacattat aactgttggc ttttctaatc 120

ttgttaaata tatctatttt taccaaaggt atttaatatt ctttttttatg acaacttaga 180

tcaactattt ttagcttggt aaatttttct aaacacaatt gttatagcca gaggaacaaa 240

gatga 245

<210> 66
<211> 243
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 66
ctggattttt catatttctt attaaaattt ctgccattta gaagaagaga actacattca 60

tggtttggaa gagataaacc tgaaaagaag agtggcctta tcttcacttt atcgataagt 120

cagtttattt gtttcattgt gtacattttt atattctcct tttgacatta taactgttgg 180

cttttctaat cttgttaaat atatctattt ttaccaaagg tatttaatat tctttttttat 240

gac 243

<210> 67
<211> 244
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (64) (64)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (215) (215)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 67
gctcatattc acatatgtaa accagaacat tctatgtact acaaacctgg tttttaaaaa 60

gganctatgt tgctatgaat taaacttgtg tcgtgctgat aggacagact ggatttttca 120

tatttcttat taaaatttct gccatttaga agaagagaac tacattcatg gtttggaaga 180

gataaacctg aaaagaagag tggccttatc ttcantttat cgataagtca gtttatttgt 240

ttca 244

<210> 68
<211> 247
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (2) (2)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (86) (86)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (191) (191)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 68
angagttgcc cagagctgtg cagtgcagtg gctgattcta ttagagaacg tatgcgttat 60

ctccatcctt aatctcagtt gtttgnttca aggacctttc atcttcagga tttacagtgc 120

attctgaaag aggagacatc aaacagaatt aggagttgtg caacagctct tttgagagga 180

ggcctaaagg ncaggagaaa aggtcttcaa tcgtggaaag aaaattaaat gttgtattaa 240

atagatc 247

<210> 69
<211> 233
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 69
aaagatgata taaaatattg ttgctctgac aaaaatacat gtatttcatt ctcgtatggt 60

gctagagtta gattaatctg cattttaaaa aactgaattg gaatagaatt ggtaagttgc 120

aaagactttt tgaaaataat taaattatca tatcttccat tcctgttatt ggagatgaaa 180

ataaaaagca acttatgaaa gtagacattc agatccagcc attactaacc tat 233

<210> 70
<211> 232
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 70
aggaaatcaa attaggataa gatttgtatc tgatgaatat tttccttctg aaccttctaa 60

cagaggaggt aagattatac agctgcacac ctcgtaactt ctcagtgtcc ataagggaag 120

aactaaagag aaccgatacc attttctggc caggttgtct cctggttaaa cgctgtggtg 180

ggaactgtgc ctgttgtctc cacaattgca atgaatgtca atgtgtccca ag 232

<210> 71
<211> 253
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 71
gtgcattctg aaagaggaga catcaaacag aattaggagt tgtgcaacag ctcttttgag 60

aggaggccta aaggacagga gaaaaggtct tcaatcgtgg aaagaaaatt aaatgttgta 120

ttaaatagat caccagctag tttcagagtt accatgtacg tattccacta gctgggttct 180

gtatttcagt tctttcgata cggcttaggg taatgtcagt acaggaaaaa aactgtgcaa 240

gtgagcacct gat 253

<210> 72
<211> 233
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (48) (48)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 72
tgtacatttt tatattctcc ttttgacatt ataactgttg gcttttcnaa tcttgttaaa 60

tatatctatt tttaccaaag gtatttaata ttctttttta tgacaactta gatcaactat 120

ttttagcttg gtaaattttt ctaaacacaa ttgttatagc cagaggaaca aagatgatat 180

aaaatattgt tgctctgaca aaaatacatg tatttcattc tcgtatggtg cta 233

<210> 73
<211> 250
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (53) (53)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 73
cacaattgtt atagccagag gaacaaagat gatataaaat attgttgctc tgncaaaaat 60

acatgtattt cattctcgta tggtgctaga gttagattaa tctgcatttt aaaaaactga 120

attggaatag aattggtaag ttgcaaagac tttttgaaaa taattaaatt atcatatctt 180

ccattcctgt tattggagat gaaaataaaa agcaacttat gaaagtaaat tcagatccac 240

cattactaac 250

<210> 74
<211> 247
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 74
atttcattct cgtatggtgc tagagttaga ttaatctgca ttttaaaaaa ctgaattgga 60

atagaattgg taagttgcaa agacttttttg aaaataatta aattatcata tcttccattc 120

ctgttattgg agatgaaaat aaaaagcaac ttatgaaagt agacattcag atccagccat 180

tactaaccta ttccttttt ggggaaatct gagcctagct cagaaaaaca taaagcacct 240

tgaaaaa 247

<210> 75
<211> 265
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (238) (238)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (246) (247)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (252) (252)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (257) (257)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 75
tgcaacagct cttttgagag gaggcctaaa ggacaggaga aaaggtcttc aatcgtggaa 60

agaaaattaa atgttgtatt aaatagatca ccagctagtt tcagagttac catgtacgta 120

ttccactagc tgggttctgt atttcagttc tttcgatacg gcttagggta atgtcagtac 180

aggaaaaaaa ctgtgcaagt gagcacctga ttccgttgcc ttgcttaacc ctaaagcncc 240

atgtcnnggg cnaaaancga aaaat 265

<210> 76
<211> 251
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (134) (134)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (157) (157)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 76
tttctaaaca caattgttat agccagagga acaaagatga tataaaatat tgttgctctg 60

acaaaaatac atgtatttca ttctcgtatg gtgctagagt tagattaatc tgcattttaa 120

aaaactgaat tggnatagaa ttggtaagtt gcaaagnctt tttgaaaata attaaattat 180

catatcttcc attcctgtta ttggaggatg gaaaataaaa agcaacttat ggaaagtagg 240

acattcagat c 251

<210> 77
<211> 291
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<222> (61) (61)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (66) (66)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (88) (88)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (141) (141)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (155) (155)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (172) (172)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (177) (177)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (227) (227)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (229) (229)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (274) (274)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 77
ccttaatctc agttgtttgc ttcaaggacc tttcatcttc aggatttaca gtgcattctg 60

naagangaga catcaaacag aattaggngt tgtgcaaaag ctcttttgag aggaggccta 120

aaggacagga gaaaaggtct ncaatcgtgg aaagnaaatt aaatgttgta tnaaatngat 180

caccagctag tttcagagtt accatgtacg tattccacta gctgggncng tattcagtct 240

ttcggaacgg cttagggtaa tgtcagtaca gganaaaaac tgtgcagtga g 291

<210> 78
<211> 253
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (84) (84)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (143) (143)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 78
gtactacaaa cctggttttt aaaaaggaac tatgttgcta tgaattaaac ttgtgtccat 60

gctgatagga cagactggat tttncatatt tcttattaaa atttctgcca tttagaagaa 120

gagaactaca ttcatggttt ggnagagata aacctgaaaa gaagagtggc cttatcttca 180

ctttatcgat aagtcagttt atttgtttca tgtgtacatt tttatattct cctttgacat 240

ataacgtggc ttt 253

<210> 79
<211> 204
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (190) (190)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 79
ttatattctc cttttgacat tataactgtt ggcttttcta atcttgttaa atatatctat 60

ttttaccaaa ggtatttaat attctttttt atgacaactt agatcaacta tttttagctt 120

ggtaaatttt tctaaacaca attgttatag ccagaggaac aaagatgata taaaatattg 180

ttgctctgan aaaaatacat gtat 204

<210> 80
<211> 303
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<222> (2) (2)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (87) (104)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (267) (267)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (272) (272)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (300) (300)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 80
anactgtgca agtgagcacc tgattccgtt gccttgctta actctaaagc tccatgtcct 60

gggcctaaaa tcgtataaaa tctggannnn nnnnnnnnnn nnnngctcat attcacatat 120

gtaaaccaga acattctatg tactacaaac ctggttttta aaaaggaact atgttgctat 180

gaattaaact tgtgtcgtgc tgataggaca gactggattt ttcatatttc ttattaaaat 240

ttctgccatt agaagaagag aactacnttc anggtttgga agagataacc ctgaaaagan 300

ggg 303

<210> 81
<211> 228
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<222> (112) (112)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (132) (132)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 81
gctcatattc acatatgtaa accagaacat tctatgtact acaaacctgg tttttaaaaa 60

ggaactattt gctatgaatt aaacttgtgt cgtgctgata ggacagactg gnttttttcat 120

atttcttatt anaatttctg ccattagaag aagagaacta cattcatggt ttggaagaga 180

taaacctgaa aagaagagtg gcctatttca ctttatcgat aagtcagt 228

<210> 82
<211> 193
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 82
gctcatattc acatatgtaa accagaacat tctatgtact acaaacctgg tttttaaaaa 60

ggaactatgt tgctatgaat taaacttgtg tcgtgctgat aggacagact ggatttttca 120

tatttcttat taaaatttct gccatttaga agaagagaac tacattcatg gtttggaaga 180

gataaacctg aaa 193

<210> 83
<211> 282
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (42) (42)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (94) (94)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (235) (235)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (269) (269)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 83
aaaaaactga attggaatag aattggtaag ttgcaaagac tntttgaaaa taattaaatt 60

atcatatctt ccattcctgt tattggagat gaanataaaa agcaacttat gaaagtagac 120

attcagatcc agccattact aacctattcc ttttttgggg aaatctgagc ctagctcaga 180

aaaacataaa gcaccttgaa aaagacttgg cagcttcctg ataaagcgtg ctgtntgtca 240

gtaggaacac atcctattta ttgtgatgnt gtggtttatt at 282

<210> 84
<211> 279
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (205) (205)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (240) (240)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (254) (254)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 84
attaaataga tcaccagcta gtttcagagt taccatgtac gtattccact agctgggttc 60

tgtatttcag ttctttcgat acggcttagg gtaatgtcag tacaggaaaa aaactgtgca 120

agtgagcacc tgattccgtt gccttggctt aactctaaag ctccatgtcc tgggcctaaa 180

atcgtataaa atctggattt ttttnttttt ttttgcgcat attcacatat gtaaaccagn 240

acattctatg tacnacaaac ctggttttta aaaaggaac 279

<210> 85
<211> 181
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 85
ggctagtttc agagttacca tgtacgtatt ccactagctg ggttctgtat ttcagttctt 60

tcgatacggc ttagggtaat gtcagtacag gaaaaaaact gtgcaagtga gcacctgatt 120

ccgttgcctt gcttaactct aaagctccat gtcctgggcc taaaatcgta taaaatctgg 180

a 181

<210> 86
<211> 269
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 86
tggtaagttg caaagacttt ttgaaaataa ttaaattatc atatcttcca ttcctgttat 60

tggagatgaa aataaaaagc aacttatgaa agtagacatt cagatccagc cattactaac 120

ctattccttt tttggggaaa tctgagccta gctcagaaaa acataaagca ccttgaaaaa 180

gacttggcag cttcctgata aagcgtgctg tgctgtgcag tagggaacac atcctattta 240

ttgtgatgtt gtggtttata tcctaaacc 269

<210> 87
<211> 184
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (54) (54)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 87
aatagatcac cagctagttt cagagttacc atgtacgtat tccactagct gggntctgta 60

tttcagttcc tttcgatacg gcttagggta atgtcagtac aggaaaaaag ctgtgcaagt 120

gagcacctga ttccgttgcc ttgcttaact ctaaagctcc atgtcctggg cctaaaatcg 180

tata 184

<210> 88
<211> 164
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (31) (31)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (53) (53)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (88) (89)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (116) (116)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (119) (119)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (121) (121)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 88
agataaacct gaaaagaaga gtggccttat nttcacttta tcgataagtc agnttatttg 60

tttcattgtg tacatttnna tattctcctt ttgacattat aactgntggc ttttctaanc 120

ntgttaaata tatctatttt taccaaaggt atttaatatt cttt 164

<210> 89
<211> 143
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 89
tatggtgcta gagttagatt aatctgcatt ttaaaaaact gaattggaat agaattggta 60

agttgcaaag acttttttgaa aataattaaa ttatcatatc ttccattcct gttattggag 120

atgaaaataa aaagcaactt atg 143

<210> 90
<211> 164
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (7) (7)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (35) (35)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (51) (51)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (132) (132)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (141) (141)
<223> n is a, c, g, t, or u

<220>
<221> misc_feature
<222> (145) (146)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 90
ttttttnttt tgctcatatt cacatatgta aaccngaaca ttctatgtac nacaaacctg 60

gtttttaaaa aggaactatg ttgctatgaa ttaaacttgt gtcgtgctga taggacagac 120

tggatttttc anatttctta ntaannttte tgccatttag aaga 164

<210> 91
<211> 244
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<222> (98) (115)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 91
gtacaggaaa aaaactgtgc aagtgagcac ctgattccgt tgccttgctt aactctaaag 60

ctccatgtcc tgggcctaaa atcgtataaa atctggannn nnnnnnnnnn nnnnngctca 120

tattcacata tgtaaaccag aacattctat gtactacaaa cctggttttt aaaaaggaac 180

tatgttgcta tgaattaaac ttgtgtcgtg ctgataggac agactggatt tttcatattt 240

ctta 244

<210> 92
<211> 254
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<222> (16) (16)

<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (20) (20)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (26) (26)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (52) (52)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (61) (61)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (144) (144)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (225) (225)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (236) (236)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (240) (240)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (242) (242)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 92
gcaaagactt tttganaatn attaanttat catatcttcc attcctgtta tnggagatga 60

naataaaaag caacttatga aagtagacat tcagatccag ccattactaa cctattcctt 120

ttttggggaa atctgagcct agcncagaaa aacataaagc accttgaaaa agacttggca 180

gcttcctgat aaagcgtgct gtgctgtgca gtaggaacac atccnattta ttgtgntgtn 240

gnggttttat gatc 254

<210> 93
<211> 243
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (103) (120)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 93
tgtcagtaca ggaaaaaaac tgtgcaagtg agcacctgat tccgttgcct tgcttaactc 60

taaagctcca tgtcctgggc ctaaaatcgt ataaaatctg gannnnnnnn nnnnnnnnnn 120

gctcatattc acatatgtaa accagaacat tctatgtact acaaacctgg tttttaaaaa 180

ggaactatgt tgctatgaat taaacttgtg tcatgctgat aggacagact ggatttttca 240

tat 243

<210> 94
<211> 244
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (36) (36)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 94
aattatcata tcttccattc ctgttattgg agatgnaaat aaaaagcaac ttatgaaagt 60

agacattcag atccagccat tactaaccta ttccttttt ggggaaatct gagcctagct 120

cagaaaaaca taaagcacct tgaaaaagac tgtcagcttc ctgataaagc gtgctgtgct 180

gtgcagtagg aacacatcct atttattgtg atgttgtggt tttattatct taaactcgtt 240

ccat 244

<210> 95
<211> 152
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (2) (2)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (16) (16)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (33) (34)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (82) (82)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (97) (97)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (108) (108)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (125) (125)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (127) (127)
<223> n is a, c, g, t, or u

<220>
<221. misc_feature
<222> (137) (137)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 95
anagatgata taaaanattg ttgctctgac aannatacat gtatttcatt ctcgtatggt 60

gctagagtta gattaatctg cnttttaaaa aactganttg gaatagantt ggtaagttgc 120

aaagncnttt gaaaatnatt aagttatcag at 152

<210> 96
<211> 292
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Human EST

<400> 96
ttccattcct gttattggag atgaaaataa aaagcaactt atgaaagtag acattcagat 60

ccagccatta ctaacctatt ccttttttgg ggaaatctga gcctagctca gaaaaacata 120

aagcaccttg aaaaagactt ggcagcttcc tgataaagcg tgctgtgctg tgcagtagga 180

acacatccta tttattgtga tgttgtggtt ttattatcta aactctgttc catacacttg 240

tataaataca tggatatttt tatgtacaga agtatgtctc ttaaccagtt ca 292

<210> 97
<211> 308
<212> DNA
<213> Artificial Sequence

<220>
<221. misc_feature
<222> (46) (46)
<223> n is a, c, g, t, or u

<223> Description of Artificial Sequence: Human EST

<400> 97
cttccattcc tgttattgga gatgaaaata aaaagcaact tatganagta gacattcaga 60

tccagccatt actaacctat tccttttttg gggaaatctg agcctagctc agaaaaacat 120

aaagcacctt gaaaaagact tggcagcttc ctgataaagc gtgctgtgct gtgcagtagg 180

aacacatcct atttattgtg atgttgtggt tttattatct taaactctgt tccatacact 240

tgtataaata catggatatt tttatgtaca gaagtatgtc tcttaaccag ttcacttatt 300

gtacctgg 308

<210> 98
<211> 1878
<212> DNA
<213> Homo sapiens

<400> 98
aaaatgtatg gatacaactt acgtttgatg aaagatttgg gcttgaagac ccagaagatg 60

acatatgcaa gtatgatttt gtagaagttg aggaacccag tgatggaact atattagggc 120

gctggtgtgg ttctggtact gtaccaggaa aacagatttc taaaggaaat caaattagga 180

taagatttgt atctgatgaa tattttcctt ctgaaccttc taacagagga ggtaagatta 240

tacagctgca cacctcgtaa cttctcagtg tccataaggg aagaactaaa gagaaccgat 300

accattttct ggccaggttg tctcctggtt aaacgctgtg gtgggaactg tgcctgttgt 360

ctccacaatt gcaatgaatg tcaatgtgtc ccaagcaaag ttactaaaaa ataccacgag 420

gtccttcagt tgagaccaaa gaccggtgtc aggggattgc acaaatcact caccgacgtg 480

gccctggagc accatgagga gtgtgactgt gtgtgcagag ggagcacagg aggatagccg 540

catcaccacc agcagctctt gcccagagct gtgcagtgca gtggctgatt ctattagaga 600

acgtatgcgt tatctccatc cttaatctca gttgtttgct tcaaggacct ttcatcttca 660

ggatttacag tgcattctga aagaggagac atcaaacaga attaggagtt gtgcaacagc 720

tcttttgaga ggaggcctaa aggacaggag aaaaggtctt caatcgtgga aagaaaatta 780

aatgttgtat taaatagatc accagctagt ttcagagtta ccatgtacgt attccactag 840

ctgggttctg tatttcagtt ctttcgatac ggcttagggt aatgtcagta caggaaaaaa 900

actgtgcaag tgagcacctg attccgttgc cttgcttaac tctaaagctc catgtcctgg 960

gcctaaaatc gtataaaatc tggatttttt ttttttttt tgctcatatt cacatatgta 1020

aaccagaaca ttctatgtac tacaaacctg gtttttaaaa aggaactatg ttgctatgaa 1080

ttaaacttgt gtcgtgctga taggacagac tggatttttc atatttctta ttaaaatttc 1140

tgccatttag aagaagagaa ctacattcat ggtttggaag agataaacct gaaaagaaga 1200

gtggccttat cttcacttta tcgataagtc agtttatttg tttcattgtg tacattttta 1260

tattctcctt ttgacattat aactgttggc ttttctaatc ttgttaaata tatctatttt 1320

taccaaaggt atttaatatt ctttttttatg acaacttaga tcaactattt ttagcttggt 1380

aaatttttct aaacacaatt gttatagcca gaggaacaaa gatgatataa aatattgttg 1440

ctctgacaaa aatacatgta tttcattctc gtatggtgct agagttagat taatctgcat 1500

tttaaaaaac tgaattggaa tagaattggt aagttgcaaa gacttttga aaataattaa 1560

attatcatat cttccattcc tgttattgga gatgaaaata aaaagcaact tatgaaagta 1620

gacattcaga tccagccatt actaacctat tccttttttg gggaaatctg agcctagctc 1680

agaaaaacat aaagcacctt gaaaaagact tggcagcttc ctgataaagc gtgctgtgct 1740

gtgcagtagg aacacatcct atttattgtg atgttgtggt tttattatct taaactctgt 1800

tccatacact tgtataaata catggatatt tttatgtaca gaagtatgtc tcttaaccag 1860

ttcacttatt gtacctgg 1878

<210> 99
<211> 113
<212> PRT
<213> Homo sapiens

<400> 99

Met Asn Ile Phe Leu Leu Asn Leu Leu Thr Glu Glu Val Arg Leu Tyr
1 5 10 15

Ser Cys Thr Pro Arg Asn Phe Ser Val Ser Ile Arg Glu Glu Leu Lys
20 25 30

Arg Thr Asp Thr Ile Phe Trp Pro Gly Cys Leu Leu Val Lys Arg Cys
35 40 45

Gly Gly Asn Cys Ala Cys Cys Leu His Asn Cys Asn Glu Cys Gln Cys
50 55 60

Val Pro Ser Lys Val Thr Lys Lys Tyr His Glu Val Leu Gln Leu Arg
65 70 75 80

Pro Lys Thr Gly Val Arg Gly Leu His Lys Ser Leu Thr Asp Val Ala
85 90 95

Leu Glu His His Glu Glu Cys Asp Cys Val Cys Arg Gly Ser Thr Gly
100 105 110

Gly

<210> 100
<211> 2475
<212> DNA
<213> Homo sapiens

<400> 100
tgccagagca ggtgggcgct tccaccccag tgcagccttc ccctggcggt ggtgaaagag 60

actcgggagt cgctgcttcc aaagtgcccg ccgtgagtga gctctcaccc cagtcagcca 120

aatgagcctc ttcgggcttc tcctgctgac atctgccctg gccggccaga gacaggggac 180

tcaggcggaa tccaacctga gtagtaaatt ccagttttcc agcaacaagg aacagaacgg 240

agtacaagat cctcagcatg agagaattat tactgtgtct actaatggaa gtattcacag 300

cccaaggttt cctcatactt atccaagaaa tacggtcttg gtatggagat tagtagcagt 360

agaggaaaat gtatggatac aacttacgtt tgatgaaaga tttgggcttg aagacccaga 420

agatgacata tgcaagtatg attttgtaga agttgaggaa cccagtgatg gaactatatt 480

agggcgctgg tgtggttctg gtactgtacc aggaaaacag atttctaaag gaaatcaaat 540

taggataaga tttgtatctg atgaatattt tccttctgaa ccagggttct gcatccacta 600

caacattgtc atgccacaat tcacagaagc tgtgagtcct tcagtgctac ccccttcagc 660

tttgccactg gacctgctta ataatgctat aactgccttt agtaccttgg aagaccttat 720

tcgatatctt gaaccagaga gatggcagtt ggacttagaa gatctatata ggccaacttg 780

gcaacttctt ggcaaggctt ttgtttttgg aagaaaatcc agagtggtgg atctgaacct 840

tctaacagag gaggtaagat tatacagctg cacacctcgt aacttctcag tgtccataag 900

ggaagaacta aagagaaccg ataccatttt ctggccaggt tgtctcctgg ttaaacgctg 960

tggtgggaac tgtgcctgtt gtctccacaa ttgcaatgaa tgtcaatgtg tcccaagcaa 1020

agttactaaa aaataccacg aggtccttca gttgagacca aagaccggtg tcaggggatt 1080

gcacaaatca ctcaccgacg tggccctgga gcaccatgag gagtgtgact gtgtgtgcag 1140

agggagcaca ggaggatagc cgcatcacca ccagcagctc ttgcccagag ctgtgcagtg 1200

cagtggctga ttctattaga gaacgtatgc gttatctcca tccttaatct cagttgtttg 1260

cttcaaggac ctttcatctt caggatttac agtgcattct gaaagaggag acatcaaaca 1320

gaattaggag ttgtgcaaca gctcttttga gaggaggcct aaaggacagg agaaaaggtc 1380

ttcaatcgtg gaaagaaaat taaatgttgt attaaataga tcaccagcta gtttcagagt 1440

taccatgtac gtattccact agctgggttc tgtatttcag ttctttcgat acggcttagg 1500

gtaatgtcag tacaggaaaa aaactgtgca agtgagcacc tgattccgtt gccttgctta 1560

actctaaagc tccatgtcct gggcctaaaa tcgtataaaa tctggatttt ttttttttt 1620

tttgctcata ttcacatatg taaaccagaa cattctatgt actacaaacc tggtttttaa 1680

aaaggaacta tgttgctatg aattaaactt gtgtcgtgct gataggacag actggatttt 1740

tcatatttct tattaaaatt tctgccattt agaagaagag aactacattc atggtttgga 1800

agagataaac ctgaaaagaa gagtggcctt atcttcactt tatcgataag ccagtttatt 1860

tgtttcattg tgtacatttt tatattctcc ttttgacatt ataactgttg gcttttctaa 1920

tcttgttaaa tatatctatt tttaccaaag gtatttaata ttctttttta tgacaactta 1980

gatcaactat ttttagcttg gtaaattttt ctaaacacaa ttgttatagc cagaggaaca 2040

aagatgatat aaaatattgt tgctctgaca aaaatacatg tatttcattc tcgtatggtg 2100

ctagagttag attaatctgc attttaaaaa actgaattgg aatagaattg gtaagttgca 2160

aagacttttt gaaaataatt aaattatcat atcttccatt cctgttattg gagatgaaaa 2220

taaaaagcaa cttatgaaag tagacattca gatccagcca ttactaacct attccttttt 2280

tggggaaatc tgagcctagc tcagaaaaac ataaagcacc ttgaaaaaga cttggcagct 2340

tcctgataaa gcgtgctgtg ctgtgcagta ggaacacatc ctatttattg tgatgttgtg 2400

gttttattat cttaaactct gttccataca cttgtataaa tacatggata tttttatgta 2460

cagaagtatg tctct 2475

<210> 101
<211> 345
<212> PRT
<213> Homo sapiens

<400> 101

```
Met Ser Leu Phe Gly Leu Leu Leu Leu Thr Ser Ala Leu Ala Gly Gln
1               5                  10                  15

Arg Gln Gly Thr Gln Ala Glu Ser Asn Leu Ser Ser Lys Phe Gln Phe
            20                  25                  30

Ser Ser Asn Lys Glu Gln Asn Gly Val Gln Asp Pro Gln His Glu Arg
        35                  40                  45

Ile Ile Thr Val Ser Thr Asn Gly Ser Ile His Ser Pro Arg Phe Pro
    50                  55                  60

His Thr Tyr Pro Arg Asn Thr Val Leu Val Trp Arg Leu Val Ala Val
65                  70                  75                  80

Glu Glu Asn Val Trp Ile Gln Leu Thr Phe Asp Glu Arg Phe Gly Leu
                85                  90                  95

Glu Asp Pro Glu Asp Asp Ile Cys Lys Tyr Asp Phe Val Glu Val Glu
            100                 105                 110
```

```
Glu Pro Ser Asp Gly Thr Ile Leu Gly Arg Trp Cys Gly Ser Gly Thr
        115                 120                 125

Val Pro Gly Lys Gln Ile Ser Lys Gly Asn Gln Ile Arg Ile Arg Phe
    130                 135                 140

Val Ser Asp Glu Tyr Phe Pro Ser Glu Pro Gly Phe Cys Ile His Tyr
145                 150                 155                 160

Asn Ile Val Met Pro Gln Phe Thr Glu Ala Val Ser Pro Ser Val Leu
                165                 170                 175

Pro Pro Ser Ala Leu Pro Leu Asp Leu Leu Asn Asn Ala Ile Thr Ala
            180                 185                 190

Phe Ser Thr Leu Glu Asp Leu Ile Arg Tyr Leu Glu Pro Glu Arg Trp
        195                 200                 205

Gln Leu Asp Leu Glu Asp Leu Tyr Arg Pro Thr Trp Gln Leu Leu Gly
    210                 215                 220

Lys Ala Phe Val Phe Gly Arg Lys Ser Arg Val Val Asp Leu Asn Leu
225                 230                 235                 240

Leu Thr Glu Glu Val Arg Leu Tyr Ser Cys Thr Pro Arg Asn Phe Ser
                245                 250                 255

Val Ser Ile Arg Glu Glu Leu Lys Arg Thr Asp Thr Ile Phe Trp Pro
            260                 265                 270

Gly Cys Leu Leu Val Lys Arg Cys Gly Gly Asn Cys Ala Cys Cys Leu
        275                 280                 285

His Asn Cys Asn Glu Cys Gln Cys Val Pro Ser Lys Val Thr Lys Lys
    290                 295                 300

Tyr His Glu Val Leu Gln Leu Arg Pro Lys Thr Gly Val Arg Gly Leu
305                 310                 315                 320

His Lys Ser Leu Thr Asp Val Ala Leu Glu His His Glu Glu Cys Asp
                325                 330                 335

Cys Val Cys Arg Gly Ser Thr Gly Gly
            340                 345
```

<210> 102
<211> 2776
<212> DNA
<213> Homo sapiens

<400> 102

```
atttgtttaa accttgggaa actggttcag gtccaggttt tgctttgatc cttttcaaaa     60

actggagaca cagaagaggg cttctaggaa aaagttttgg gatgggatta tgtggaaact    120

accctgcgat tctctgctgc cagagcaggc tcggcgcttc caccccagtg cagccttccc    180

ctggcggtgg tgaaagagac tcgggagtcg ctgcttccaa agtgcccgcc gtgagtgagc    240

tctcacccca gtcagccaaa tgagcctctt cgggcttctc ctgctgacat ctgccctggc    300
```

cggccagaga caggggactc aggcggaatc caacctgagt agtaaattcc agttttccag 360

caacaaggaa cagtacggag tacaagatcc tcagcatgag agaattatta ctgtgtctac 420

taatggaagt attcacagcc caaggtttcc tcatacttat ccaagaaata cggtcttggt 480

atggagatta gtagcagtag aggaaaatgt atggatacaa cttacgtttg atgaaagatt 540

tgggcttgaa gacccagaag atgacatatg caagtatgat tttgtagaag ttgaggaacc 600

cagtgatgga actatattag ggcgctggtg tggttctggt actgtaccag gaaaacagat 660

ttctaaagga aatcaaatta ggataagatt tgtatctgat gaatattttc cttctgaacc 720

agggttctgc atccactaca acattgtcat gccacaattc acagaagctg tgagtccttc 780

agtgctaccc ccttcagctt tgccactgga cctgcttaat aatgctataa ctgcctttag 840

taccttggaa gaccttattc gatatcttga accagagaga tggcagttgg acttagaaga 900

tctatatagg ccaacttggc aacttcttgg caaggctttt gtttttggaa gaaaatccag 960

agtggtggat ctgaaccttc taacagagga ggtaagatta tacagctgca cacctcgtaa 1020

cttctcagtg tccataaggg aagaactaaa gagaaccgat accattttct ggccaggttg 1080

tctcctggtt aaacgctgtg gtgggaactg tgcctgttgt ctccacaatt gcaatgaatg 1140

tcaatgtgtc ccaagcaaag ttactaaaaa ataccacgag gtccttcagt tgagaccaaa 1200

gaccggtgtc aggggattgc acaaatcact caccgacgtg gccctggagc accatgagga 1260

gtgtgactgt gtgtgcagag ggagcacagg aggatagccg catcaccacc agcagctctt 1320

gcccagagct gtgcagtgca gtggctgatt ctattagaga acgtatgcgt tatctccatc 1380

cttaatctca gttgtttgct tcaaggacct ttcatcttca ggatttacag tgcattctga 1440

aagaggagac atcaaacaga attaggagtt gtgcaacagc tcttttgaga ggaggcctaa 1500

aggacaggag aaaaggtctt caatcgtgga aagaaaatta aatgttgtat taaatagatc 1560

accagctagt ttcagagtta ccatgtacgt attccactag ctgggttctg tatttcagtt 1620

ctttcgatac ggcttagggt aatgtcagta caggaaaaaa actgtgcaag tgagcacctg 1680

attccgttgc cttggcttaa ctctaaagct ccatgtcctg ggcctaaaat cgtataaaat 1740

ctggattttt ttttttttt ttgcgcatat tcacatatgt aaaccagaac attctatgta 1800

ctacaaacct ggtttttaaa aaggaactat gttgctatga attaaacttg tgtcatgctg 1860

ataggacaga ctggattttt catatttctt attaaaattt ctgccattta gaagaagaga 1920

actacattca tggtttggaa gagataaacc tgaaaagaag agtggcctta tcttcacttt 1980

atcgataagt cagtttattt gtttcattgt gtacattttt atattctcct tttgacatta 2040

taactgttgg cttttctaat cttgttaaat atatctattt ttaccaaagg tatttaatat 2100

tctttttat gacaacttag atcaactatt tttagcttgg taaatttttc taaacacaat 2160

tgttatagcc agaggaacaa agatgatata aaatattgtt gctctgacaa aaatacatgt 2220

atttcattct cgtatggtgc tagagttaga ttaatctgca ttttaaaaaa ctgaattgga 2280

atagaattgg taagttgcaa agacttttg aaaataatta aattatcata tcttccattc 2340

ctgttattgg agatgaaaat aaaaagcaac ttatgaaagt agacattcag atccagccat 2400

tactaaccta ttccttttt ggggaaatct gagcctagct cagaaaaaca taaagcacct 2460

tgaaaaagac ttggcagctt cctgataaag cgtgctgtgc tgtgcagtag gaacacatcc 2520

tatttattgt gatgttgtgg ttttattatc ttaaactctg ttccatacac ttgtataaat 2580

acatggatat ttttatgtac agaagtatgt ctcttaacca gttcacttat tgtactctgg 2640

caatttaaaa gaaaatcagt aaaatatttt gcttgtaaaa tgcttaatat cgtgcctagg 2700

ttatgtggtg actatttgaa tcaaaaatgt attgaatcat caaataaaag aatgtggcta 2760

ttttggggag aaaatt 2776

<210> 103
<211> 345
<212> PRT
<213> Homo sapiens

<400> 103

```
Met Ser Leu Phe Gly Leu Leu Leu Leu Thr Ser Ala Leu Ala Gly Gln
1               5                  10                  15

Arg Gln Gly Thr Gln Ala Glu Ser Asn Leu Ser Ser Lys Phe Gln Phe
            20                  25                  30

Ser Ser Asn Lys Glu Gln Tyr Gly Val Gln Asp Pro Gln His Glu Arg
        35                  40                  45

Ile Ile Thr Val Ser Thr Asn Gly Ser Ile His Ser Pro Arg Phe Pro
    50                  55                  60

His Thr Tyr Pro Arg Asn Thr Val Leu Val Trp Arg Leu Val Ala Val
65                  70                  75                  80

Glu Glu Asn Val Trp Ile Gln Leu Thr Phe Asp Glu Arg Phe Gly Leu
                85                  90                  95

Glu Asp Pro Glu Asp Asp Ile Cys Lys Tyr Asp Phe Val Glu Val Glu
            100                 105                 110

Glu Pro Ser Asp Gly Thr Ile Leu Gly Arg Trp Cys Gly Ser Gly Thr
        115                 120                 125

Val Pro Gly Lys Gln Ile Ser Lys Gly Asn Gln Ile Arg Ile Arg Phe
    130                 135                 140

Val Ser Asp Glu Tyr Phe Pro Ser Glu Pro Gly Phe Cys Ile His Tyr
145                 150                 155                 160

Asn Ile Val Met Pro Gln Phe Thr Glu Ala Val Ser Pro Ser Val Leu
                165                 170                 175
```

```
Pro Pro Ser Ala Leu Pro Leu Asp Leu Leu Asn Asn Ala Ile Thr Ala
            180                 185                 190

Phe Ser Thr Leu Glu Asp Leu Ile Arg Tyr Leu Glu Pro Glu Arg Trp
        195                 200                 205

Gln Leu Asp Leu Glu Asp Leu Tyr Arg Pro Thr Trp Gln Leu Leu Gly
    210                 215                 220

Lys Ala Phe Val Phe Gly Arg Lys Ser Arg Val Val Asp Leu Asn Leu
225                 230                 235                 240

Leu Thr Glu Glu Val Arg Leu Tyr Ser Cys Thr Pro Arg Asn Phe Ser
                245                 250                 255

Val Ser Ile Arg Glu Glu Leu Lys Arg Thr Asp Thr Ile Phe Trp Pro
            260                 265                 270

Gly Cys Leu Leu Val Lys Arg Cys Gly Gly Asn Cys Ala Cys Cys Leu
        275                 280                 285

His Asn Cys Asn Glu Cys Gln Cys Val Pro Ser Lys Val Thr Lys Lys
    290                 295                 300

Tyr His Glu Val Leu Gln Leu Arg Pro Lys Thr Gly Val Arg Gly Leu
305                 310                 315                 320

His Lys Ser Leu Thr Asp Val Ala Leu Glu His His Glu Glu Cys Asp
                325                 330                 335

Cys Val Cys Arg Gly Ser Thr Gly Gly
            340                 345
```

<210> 104
<211> 1473
<212> DNA
<213> Homo sapiens

<400> 104

```
tttgtttaaa ccttgggaaa ctggttcagg tccaggtttt gctttgatcc ttttcaaaaa     60

ctggagacac agaagagggc tctaggaaaa agttttggat gggattatgt ggaaactacc    120

ctgcgattct ctgctgccag agcaggctcg gcgcttccac cccagtgcag ccttcccctg    180

gcggtggtga aagagactcg ggagtcgctg cttccaaagt gcccgccgtg agtgagctct    240

caccccagtc agccaaatga gcctcttcgg gcttctcctg ctgacatctg ccctggccgg    300

ccagagacag gggactcagg cggaatccaa cctgagtagt aaattccagt tttccagcaa    360

caaggaacag aacggagtac aagatcctca gcatgagaga attattactg tgtctactaa    420

tggaagtatt cacagcccaa ggtttcctca tacttatcca agaaatacgg tcttggtatg    480

gagattagta gcagtagagg aaaatgtatg gatacaactt acgtttgatg aaagatttgg    540

gcttgaagac ccagaagatg acatatgcaa gtatgatttt gtagaagttg aggaacccag    600

tgatggaact atattagggc gctggtgtgg ttctggtact gtaccaggaa aacagatttc    660
```

taaaggaaat caaattagga taagatttgt atctgatgaa tattttcctt ctgaaccagg 720

gttctgcatc cactacaaca ttgtcatgcc acaattcaca gaagctgtga gtccttcagt 780

gctacccccc tcagctttgc cactggacct gcttaataat gctataactg cctttagtac 840

cttggaagac cttattcgat atcttgaacc agagagatgg cagttggact tagaagatct 900

atataggcca acttggcaac ttcttggcaa ggcttttgtt tttggaagaa aatccagagt 960

ggtggatctg aaccttctaa cagaggaggt aagattatac agctgcacac ctcgtaactt 1020

ctcagtgtcc ataagggaag aactaaagag aaccgatacc attttctggc caggttgtct 1080

cctggttaaa cgctgtggtg ggaactgtgc ctgttgtctc cacaattgca atgaatgtca 1140

atgtgtccca agcaaagtta ctaaaaaata ccacgaggtc cttcagttga gaccaaagac 1200

cggtgtcagg ggattgcaca aatcactcac cgacgtggcc ctggagcacc atgaggagtg 1260

tgactgtgtg tgcagaggga gcacaggagg atagccgcat caccaccagc agctcttgcc 1320

cagagctgtg cagtgcagtg gctgattcta ttagagaacg tatgcgttat ctccatcctt 1380

aatctcagtt gtttgcttca aggacctttc atcttcagga tttacagtgc attctgaaag 1440

aggagacatc aaacagaatt aggagttgtg caa 1473

<210> 105
<211> 215
<212> PRT
<213> Homo sapiens

<400> 105

```
Met Asn Phe Leu Leu Ser Trp Val His Trp Ser Leu Ala Leu Leu Leu
1               5                  10                  15

Tyr Leu His His Ala Lys Trp Ser Gln Ala Ala Pro Met Ala Glu Gly
            20                  25                  30

Gly Gly Gln Asn His His Glu Val Val Lys Phe Met Asp Val Tyr Gln
        35                  40                  45

Arg Ser Tyr Cys His Pro Ile Glu Thr Leu Val Asp Ile Phe Gln Glu
    50                  55                  60

Tyr Pro Asp Glu Ile Glu Tyr Ile Phe Lys Pro Ser Cys Val Pro Leu
65                  70                  75                  80

Met Arg Cys Gly Gly Cys Cys Asn Asp Glu Gly Leu Glu Cys Val Pro
                85                  90                  95

Thr Glu Glu Ser Asn Ile Thr Met Gln Ile Met Arg Ile Lys Pro His
            100                 105                 110

Gln Gly Gln His Ile Gly Glu Met Ser Phe Leu Gln His Asn Lys Cys
        115                 120                 125

Glu Cys Arg Pro Lys Lys Asp Arg Ala Arg Gln Glu Lys Lys Ser Val
    130                 135                 140
```

```
Arg Gly Lys Gly Lys Gly Gln Lys Arg Lys Arg Lys Lys Ser Arg Tyr
145                 150                 155                 160

Lys Ser Trp Ser Val Pro Cys Gly Pro Cys Ser Glu Arg Arg Lys His
                165                 170                 175

Leu Phe Val Gln Asp Pro Gln Thr Cys Lys Cys Ser Cys Lys Asn Thr
            180                 185                 190

Asp Ser Arg Cys Lys Ala Arg Gln Leu Glu Leu Asn Glu Arg Thr Cys
        195                 200                 205

Arg Cys Asp Lys Pro Arg Arg
    210                 215


<210>  106
<211>  149
<212>  PRT
<213>  Homo sapiens

<400>  106
Met Pro Val Met Arg Leu Phe Pro Cys Phe Leu Gln Leu Leu Ala Gly
1               5                   10                  15

Leu Ala Leu Pro Ala Val Pro Pro Gln Gln Trp Ala Leu Ser Ala Gly
            20                  25                  30

Asn Gly Ser Ser Glu Val Glu Val Val Pro Phe Gln Glu Val Trp Gly
        35                  40                  45

Arg Ser Tyr Cys Arg Ala Leu Glu Arg Leu Val Asp Val Val Ser Glu
    50                  55                  60

Tyr Pro Ser Glu Val Glu His Met Phe Ser Pro Ser Cys Val Ser Leu
65                  70                  75                  80

Leu Arg Cys Thr Gly Cys Cys Gly Asp Glu Asn Leu His Cys Val Pro
                85                  90                  95

Val Glu Thr Ala Asn Val Thr Met Gln Leu Leu Lys Ile Arg Ser Gly
            100                 105                 110

Asp Arg Pro Ser Tyr Val Glu Leu Thr Phe Ser Gln His Val Arg Cys
        115                 120                 125

Glu Cys Arg Pro Leu Arg Glu Lys Met Lys Pro Glu Arg Cys Gly Asp
    130                 135                 140

Ala Val Pro Arg Arg
145


<210>  107
<211>  188
<212>  PRT
<213>  Homo sapiens

<400>  107
Met Ser Pro Leu Leu Arg Arg Leu Leu Leu Ala Ala Leu Leu Gln Leu
1               5                   10                  15
```

```
Ala Pro Ala Gln Ala Pro Val Ser Gln Pro Asp Ala Pro Gly His Gln
            20                  25                  30

Arg Lys Val Val Ser Trp Ile Asp Val Tyr Thr Arg Ala Thr Cys Gln
        35                  40                  45

Pro Arg Glu Val Val Val Pro Leu Thr Val Glu Leu Met Gly Thr Val
    50                  55                  60

Ala Lys Gln Leu Val Pro Ser Cys Val Thr Val Gln Arg Cys Gly Gly
65                  70                  75                  80

Cys Cys Pro Asp Asp Gly Leu Glu Cys Val Pro Thr Gly Gln His Gln
                85                  90                  95

Val Arg Met Gln Ile Leu Met Ile Arg Tyr Pro Ser Ser Gln Leu Gly
            100                 105                 110

Glu Met Ser Leu Glu Glu His Ser Gln Cys Glu Cys Arg Pro Lys Lys
        115                 120                 125

Lys Asp Ser Ala Val Lys Pro Asp Ser Pro Arg Pro Leu Cys Pro Arg
    130                 135                 140

Cys Thr Gln His His Gln Arg Pro Asp Pro Arg Thr Cys Arg Cys Arg
145                 150                 155                 160

Cys Arg Arg Arg Ser Phe Leu Arg Cys Gln Gly Arg Gly Leu Glu Leu
                165                 170                 175

Asn Pro Asp Thr Cys Arg Cys Arg Lys Leu Arg Arg
            180                 185
```

<210> 108
<211> 419
<212> PRT
<213> Homo sapiens

<400> 108

```
Met His Leu Leu Gly Phe Phe Ser Val Ala Cys Ser Leu Leu Ala Ala
1               5                   10                  15

Ala Leu Leu Pro Gly Pro Arg Glu Ala Pro Ala Ala Ala Ala Ala Phe
            20                  25                  30

Glu Ser Gly Leu Asp Leu Ser Asp Ala Glu Pro Asp Ala Gly Glu Ala
        35                  40                  45

Thr Ala Tyr Ala Ser Lys Asp Leu Glu Glu Gln Leu Arg Ser Val Ser
    50                  55                  60

Ser Val Asp Glu Leu Met Thr Val Leu Tyr Pro Glu Tyr Trp Lys Met
65                  70                  75                  80

Tyr Lys Cys Gln Leu Arg Lys Gly Gly Trp Gln His Asn Arg Glu Gln
                85                  90                  95

Ala Asn Leu Asn Ser Arg Thr Glu Glu Thr Ile Lys Phe Ala Ala Ala
            100                 105                 110
```

```
His Tyr Asn Thr Glu Ile Leu Lys Ser Ile Asp Asn Glu Trp Arg Lys
        115                 120                 125

Thr Gln Cys Met Pro Arg Glu Val Cys Ile Asp Val Gly Lys Glu Phe
    130                 135                 140

Gly Val Ala Thr Asn Thr Phe Phe Lys Pro Pro Cys Val Ser Val Tyr
145                 150                 155                 160

Arg Cys Gly Gly Cys Cys Asn Ser Glu Gly Leu Gln Cys Met Asn Thr
                165                 170                 175

Ser Thr Ser Tyr Leu Ser Lys Thr Leu Phe Glu Ile Thr Val Pro Leu
            180                 185                 190

Ser Gln Gly Pro Lys Pro Val Thr Ile Ser Phe Ala Asn His Thr Ser
        195                 200                 205

Cys Arg Cys Met Ser Lys Leu Asp Val Tyr Arg Gln Val His Ser Ile
    210                 215                 220

Ile Arg Arg Ser Leu Pro Ala Thr Leu Pro Gln Cys Gln Ala Ala Asn
225                 230                 235                 240

Lys Thr Cys Pro Thr Asn Tyr Met Trp Asn Asn His Ile Cys Arg Cys
                245                 250                 255

Leu Ala Gln Glu Asp Phe Met Phe Ser Ser Asp Ala Gly Asp Asp Ser
            260                 265                 270

Thr Asp Gly Phe His Asp Ile Cys Gly Pro Asn Lys Glu Leu Asp Glu
        275                 280                 285

Glu Thr Cys Gln Cys Val Cys Arg Ala Gly Leu Arg Pro Ala Ser Cys
    290                 295                 300

Gly Pro His Lys Glu Leu Asp Arg Asn Ser Cys Gln Cys Val Cys Lys
305                 310                 315                 320

Asn Lys Leu Phe Pro Ser Gln Cys Gly Ala Asn Arg Glu Phe Asp Glu
                325                 330                 335

Asn Thr Cys Gln Cys Val Cys Lys Arg Thr Cys Pro Arg Asn Gln Pro
            340                 345                 350

Leu Asn Pro Gly Lys Cys Ala Cys Glu Cys Thr Glu Ser Pro Gln Lys
        355                 360                 365

Cys Leu Leu Lys Gly Lys Lys Phe His His Gln Thr Cys Ser Cys Tyr
    370                 375                 380

Arg Arg Pro Cys Thr Asn Arg Gln Lys Ala Cys Glu Pro Gly Phe Ser
385                 390                 395                 400

Tyr Ser Glu Glu Val Cys Arg Cys Val Pro Ser Tyr Trp Lys Arg Pro
                405                 410                 415

Gln Met Ser
```

<210> 109
<211> 354
<212> PRT
<213> Homo sapiens

<400> 109

```
Met Tyr Arg Glu Trp Val Val Val Asn Val Phe Met Met Leu Tyr Val
1               5                  10                  15

Gln Leu Val Gln Gly Ser Ser Asn Glu His Gly Pro Val Lys Arg Ser
            20                  25                  30

Ser Gln Ser Thr Leu Glu Arg Ser Glu Gln Gln Ile Arg Ala Ala Ser
        35                  40                  45

Ser Leu Glu Glu Leu Leu Arg Ile Thr His Ser Glu Asp Trp Lys Leu
    50                  55                  60

Trp Arg Cys Arg Leu Arg Leu Lys Ser Phe Thr Ser Met Asp Ser Arg
65                  70                  75                  80

Ser Ala Ser His Arg Ser Thr Arg Phe Ala Ala Thr Phe Tyr Asp Ile
                85                  90                  95

Glu Thr Leu Lys Val Ile Asp Glu Glu Trp Gln Arg Thr Gln Cys Ser
            100                 105                 110

Pro Arg Glu Thr Cys Val Glu Val Ala Ser Glu Leu Gly Lys Ser Thr
        115                 120                 125

Asn Thr Phe Phe Lys Pro Pro Cys Val Asn Val Phe Arg Cys Gly Gly
    130                 135                 140

Cys Cys Asn Glu Glu Ser Leu Ile Cys Met Asn Thr Ser Thr Ser Tyr
145                 150                 155                 160

Ile Ser Lys Gln Leu Phe Glu Ile Ser Val Pro Leu Thr Ser Val Pro
                165                 170                 175

Glu Leu Val Pro Val Lys Val Ala Asn His Thr Gly Cys Lys Cys Leu
            180                 185                 190

Pro Thr Ala Pro Arg His Pro Tyr Ser Ile Ile Arg Arg Ser Ile Gln
        195                 200                 205

Ile Pro Glu Glu Asp Arg Cys Ser His Ser Lys Lys Leu Cys Pro Ile
    210                 215                 220

Asp Met Leu Trp Asp Ser Asn Lys Cys Lys Cys Val Leu Gln Glu Glu
225                 230                 235                 240

Asn Pro Leu Ala Gly Thr Glu Asp His Ser His Leu Gln Glu Pro Ala
                245                 250                 255

Leu Cys Gly Pro His Met Met Phe Asp Glu Asp Arg Cys Glu Cys Val
            260                 265                 270

Cys Lys Thr Pro Cys Pro Lys Asp Leu Ile Gln His Pro Lys Asn Cys
        275                 280                 285

Ser Cys Phe Glu Cys Lys Glu Ser Leu Glu Thr Cys Cys Gln Lys His
    290                 295                 300
```

```
Lys Leu Phe His Pro Asp Thr Cys Ser Cys Glu Asp Arg Cys Pro Phe
305                 310                 315                 320

His Thr Arg Pro Cys Ala Ser Gly Lys Thr Ala Cys Ala Lys His Cys
                325                 330                 335

Arg Phe Pro Lys Glu Lys Arg Ala Ala Gln Gly Pro His Ser Arg Lys
            340                 345                 350

Asn Pro
```

<210> 110
<211> 345
<212> PRT
<213> Homo sapiens

<400> 110

```
Met Ser Leu Phe Gly Leu Leu Leu Leu Thr Ser Ala Leu Ala Gly Gln
1               5                   10                  15

Arg Gln Gly Thr Gln Ala Glu Ser Asn Leu Ser Ser Lys Phe Gln Phe
            20                  25                  30

Ser Ser Asn Lys Glu Gln Asn Gly Val Gln Asp Pro Gln His Glu Arg
        35                  40                  45

Ile Ile Thr Val Ser Thr Asn Gly Ser Ile His Ser Pro Arg Phe Pro
    50                  55                  60

His Thr Tyr Pro Arg Asn Thr Val Leu Val Trp Arg Leu Val Ala Val
65                  70                  75                  80

Glu Glu Asn Val Trp Ile Gln Leu Thr Phe Asp Glu Arg Phe Gly Leu
                85                  90                  95

Glu Asp Pro Glu Asp Asp Ile Cys Lys Tyr Asp Phe Val Glu Val Glu
            100                 105                 110

Glu Pro Ser Asp Gly Thr Ile Leu Gly Arg Trp Cys Gly Ser Gly Thr
        115                 120                 125

Val Pro Gly Lys Gln Ile Ser Lys Gly Asn Gln Ile Arg Ile Arg Phe
    130                 135                 140

Val Ser Asp Glu Tyr Phe Pro Ser Glu Pro Gly Phe Cys Ile His Tyr
145                 150                 155                 160

Asn Ile Val Met Pro Gln Phe Thr Glu Ala Val Ser Pro Ser Val Leu
                165                 170                 175

Pro Pro Ser Ala Leu Pro Leu Asp Leu Leu Asn Asn Ala Ile Thr Ala
            180                 185                 190

Phe Ser Thr Leu Glu Asp Leu Ile Arg Tyr Leu Glu Pro Glu Arg Trp
        195                 200                 205

Gln Leu Asp Leu Glu Asp Leu Tyr Arg Pro Thr Trp Gln Leu Leu Gly
    210                 215                 220
```

```
Lys Ala Phe Val Phe Gly Arg Lys Ser Arg Val Val Asp Leu Asn Leu
225                 230                 235                 240

Leu Thr Glu Glu Val Arg Leu Tyr Ser Cys Thr Pro Arg Asn Phe Ser
                245                 250                 255

Val Ser Ile Arg Glu Glu Leu Lys Arg Thr Asp Thr Ile Phe Trp Pro
            260                 265                 270

Gly Cys Leu Leu Val Lys Arg Cys Gly Gly Asn Cys Ala Cys Cys Leu
        275                 280                 285

His Asn Cys Asn Glu Cys Gln Cys Val Pro Ser Lys Val Thr Lys Lys
    290                 295                 300

Tyr His Glu Val Leu Gln Leu Arg Pro Lys Thr Gly Val Arg Gly Leu
305                 310                 315                 320

His Lys Ser Leu Thr Asp Val Ala Leu Glu His His Glu Glu Cys Asp
                325                 330                 335

Cys Val Cys Arg Gly Ser Thr Gly Gly
            340                 345
```

<210> 111
<211> 167
<212> PRT
<213> Homo sapiens

<400> 111

```
Met Ser Leu Phe Gly Leu Leu Leu Leu Thr Ser Ala Leu Ala Gly Gln
1               5                   10                  15

Arg Gln Gly Thr Gln Ala Glu Ser Asn Leu Ser Ser Lys Phe Gln Phe
            20                  25                  30

Ser Ser Asn Lys Glu Gln Asn Gly Val Gln Asp Pro Gln His Glu Arg
        35                  40                  45

Ile Ile Thr Val Ser Thr Asn Gly Ser Ile His Ser Pro Arg Phe Pro
    50                  55                  60

His Thr Tyr Pro Arg Asn Thr Val Leu Val Trp Arg Leu Val Ala Val
65                  70                  75                  80

Glu Glu Asn Val Trp Ile Gln Leu Thr Phe Asp Glu Arg Phe Gly Leu
                85                  90                  95

Glu Asp Pro Glu Asp Asp Ile Cys Lys Tyr Asp Phe Val Glu Val Glu
            100                 105                 110

Glu Pro Ser Asp Gly Thr Ile Leu Gly Arg Trp Cys Gly Ser Gly Thr
        115                 120                 125

Val Pro Gly Lys Gln Ile Ser Lys Gly Asn Gln Ile Arg Ile Arg Phe
    130                 135                 140

Val Ser Asp Glu Tyr Phe Pro Ser Glu Pro Ser Asn Arg Gly Gly Lys
145                 150                 155                 160
```

```
Ile Ile Gln Leu His Thr Ser
                165


<210>  112
<211>  282
<212>  PRT
<213>  Homo sapiens

<400>  112
Met Ser Leu Phe Gly Leu Leu Leu Leu Thr Ser Ala Leu Ala Gly Gln
1               5                  10                  15

Arg Gln Gly Thr Gln Ala Glu Ser Asn Leu Ser Ser Lys Phe Gln Phe
            20                  25                  30

Ser Ser Asn Lys Glu Gln Asn Gly Val Gln Asp Pro Gln His Glu Arg
        35                  40                  45

Ile Ile Thr Val Ser Thr Asn Gly Ser Ile His Ser Pro Arg Phe Pro
    50                  55                  60

His Thr Tyr Pro Arg Asn Thr Val Leu Val Trp Arg Leu Val Ala Val
65                  70                  75                  80

Glu Glu Asn Val Trp Ile Gln Leu Thr Phe Asp Glu Arg Phe Gly Leu
                85                  90                  95

Glu Asp Pro Glu Asp Asp Ile Cys Lys Tyr Asp Phe Val Glu Val Glu
            100                 105                 110

Glu Pro Ser Asp Gly Thr Ile Leu Gly Arg Trp Cys Gly Ser Gly Thr
        115                 120                 125

Val Pro Gly Lys Gln Ile Ser Lys Gly Asn Gln Ile Arg Ile Arg Phe
    130                 135                 140

Val Ser Asp Glu Tyr Phe Pro Ser Glu Pro Gly Phe Cys Ile His Tyr
145                 150                 155                 160

Asn Ile Val Met Pro Gln Phe Thr Glu Ala Val Ser Pro Ser Val Leu
                165                 170                 175

Pro Pro Ser Ala Leu Pro Leu Asp Leu Leu Asn Asn Ala Ile Thr Ala
            180                 185                 190

Phe Ser Thr Leu Glu Asp Leu Ile Arg Tyr Leu Glu Pro Glu Arg Trp
        195                 200                 205

Gln Leu Asp Leu Glu Asp Leu Tyr Arg Pro Thr Trp Gln Leu Leu Gly
    210                 215                 220

Lys Ala Phe Val Phe Gly Arg Lys Ser Arg Val Val Asp Leu Asn Leu
225                 230                 235                 240

Leu Thr Glu Glu Val Leu Gln Leu Arg Pro Lys Thr Gly Val Arg Gly
                245                 250                 255

Leu His Lys Ser Leu Thr Asp Val Ala Leu Glu His His Glu Glu Cys
            260                 265                 270
```

Asp Cys Val Cys Arg Gly Ser Thr Gly Gly
275 280

<210> 113
<211> 822
<212> DNA
<213> Homo sapiens

<400> 113
aggaaatcaa attaggataa gatttgtatc tgatgaatat tttccttctg aaccttctaa 60

cagaggaggt aagattatac agctgcacac ctcgtaactt ctcagtgtcc ataagggaag 120

aactaaagag aaccgatacc attttctggc caggttgtct cctggttaaa cgctgtggtg 180

ggaactgtgc ctgttgtctc cacaattgca atgaatgtca atgtgtccca agcaaagtta 240

ctaaaaaata ccacgaggtc cttcagttga gaccaaagac cggtgtcagg ggattgcaca 300

aatcactcac cgacgtggcc ctggagcacc atgaggagtg tgactgtgtg tgcagaggga 360

gcacaggagg atagccgcat caccaccagc agctcttgcc cagagctgtg cagtgcagtg 420

gctgattcta ttagagaacg tatgcgttat ctccatcctt aatctcagtt gtttgcttca 480

aggacctttc atcttcagga tttacagtgc attctgaaag aggagacatc aaacagaatt 540

aggagttgtg caacagctct tttgagagga ggcctaaagg acaggagaaa aggtcttcaa 600

tcgtggaaag aaaattaaat gttgtattaa atagatcacc agctagtttc agagttacca 660

tgtacgtatt ccactagctg ggttctgtat ttcagttctt tcgatacggc ttagggtaat 720

gtcagtacag gaaaaaaact gtgcaagtga gcacctgatt ccgttgcctt ggcttaactc 780

taaagctcca tgtcctgggc ctaaaatcgt ataaaatctg ga 822

<210> 114
<211> 227
<212> PRT
<213> Homo sapiens

<400> 114
Met Asn Ile Phe Leu Leu Asn Leu Leu Thr Glu Glu Val Arg Leu Tyr
1 5 10 15

Ser Cys Thr Pro Arg Asn Phe Ser Val Ser Ile Arg Glu Glu Leu Lys
20 25 30

Arg Thr Asp Thr Ile Phe Trp Pro Gly Cys Leu Leu Val Lys Arg Cys
35 40 45

Gly Gly Asn Cys Ala Cys Cys Leu His Asn Cys Asn Glu Cys Gln Cys
50 55 60

Val Pro Ser Lys Val Thr Lys Lys Tyr His Glu Val Leu Gln Leu Arg
65 70 75 80

Pro Lys Thr Gly Val Arg Gly Leu His Lys Ser Leu Thr Asp Val Ala
85 90 95

```
Val Ser Gly Asp Cys Thr Asn His Ser Pro Thr Trp Pro Leu Glu His
            100                 105                 110

His Glu Glu Cys Asp Cys Val Cys Arg Gly Ser Thr Gly Gly Val Gln
        115                 120                 125

Arg Glu His Arg Arg Ile Ala Ala Ser Pro Pro Ala Ala Leu Ala Trp
    130                 135                 140

Ser Thr Met Arg Ser Val Thr Val Cys Ala Glu Gly Ala Gln Glu Asp
145                 150                 155                 160

Ser Arg Ile Thr Thr Ser Ser Ser Cys Gln Ser Cys Ala Val Gln Trp
                165                 170                 175

Leu Ile Leu Leu Glu Asn Val Cys Val Ile Ser Ile Leu Asn Leu Ser
            180                 185                 190

Cys Leu Leu Gln Pro Glu Leu Cys Ser Ala Val Ala Asp Ser Ile Arg
        195                 200                 205

Glu Arg Met Arg Tyr Leu His Pro Gly Pro Phe Ile Phe Arg Ile Tyr
    210                 215                 220

Ser Ala Phe
225
```

<210> 115
<211> 1716
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (830)..(830)
<223> n is a, c, g, t, or u

<400> 115

```
aggaaatcaa attaggataa gatttgtatc tgatgaatat ttccttctg aaccttctaa     60

cagaggaggt aagattatac agctgcacac ctcgtaactt ctcagtgtcc ataagggaag    120

aactaaagag aaccgatacc attttctggc caggttgtct cctggttaaa cgctgtggtg    180

ggaactgtgc ctgttgtctc cacaattgca atgaatgtca atgtgtccca agcaaagtta    240

ctaaaaaata ccacgaggtc cttcagttga gaccaaagac cggtgtcagg ggattgcaca    300

aatcactcac cgacgtggcc ctggagcacc atgaggagtg tgactgtgtg tgcagaggga    360

gcacaggagg atagccgcat caccaccagc agctcttgcc cagagctgtg cagtgcagtg    420

gctgattcta ttagagaacg tatgcgttat ctccatcctt aatctcagtt gtttgcttca    480

aggacctttc atcttcagga tttacagtgc attctgaaag aggagacatc aaacagaatt    540

aggagttgtg caacagctct tttgagagga ggcctaaagg acaggagaaa aggtcttcaa    600

tcgtggaaag aaaattaaat gttgtattaa atagatcacc agctagtttc agagttacca    660

tgtacgtatt ccactagctg ggttctgtat ttcagttctt tcgatacggc ttagggtaat    720
```

gtcagtacag gaaaaaaact gtgcaagtga gcacctgatt ccgttgcctt ggcttaactc 780

taaagctcca tgtcctgggc ctaaaatcgt ataaaatctg gatttttttn ttttttttg 840

cgcatattca catatgtaaa ccagaacatt ctatgtacta caaacctggt ttttaaaaag 900

gaactatgtt gctatgaatt aaacttgtgt cgtgctgata ggacagactg gatttttcat 960

atttcttatt aaaatttctg ccatttagaa gaagagaact acattcatgg tttggaagag 1020

ataaacctga aaagaagagt ggccttatct tcactttatc gataagtcag tttatttgtt 1080

tcattgtgta cattttata ttctcctttt gacattataa ctgttggctt ttctaatctt 1140

gttaaatata tctattttta ccaaaggtat ttaatattct tttttatgac aacttagatc 1200

aactattttt agcttggtaa atttttctaa acacaattgt tatagccaga ggaacaaaga 1260

tgatataaaa tattgttgct ctgacaaaaa tacatgtatt tcattctcgt atggtgctag 1320

agttagatta atctgcattt taaaaaactg aattggaata gaattggtaa gttgcaaaga 1380

ctttttgaaa ataattaaat tatcatatct tccattcctg ttattggaga tgaaaataaa 1440

aagcaactta tgaaagtaga cattcagatc cagccattac taacctattc ctttttgggg 1500

gaaatctgag cctagctcag aaaaacataa agcaccttga aaaagacttg gcagcttcct 1560

gataaagcgt gctgtgctgt gcagtaggaa cacatcctat ttattgtgat gttgtggttt 1620

tattatctta aactctgttc catacacttg tataaataca tggatatttt tatgtacaga 1680

agtatgtctc ttaaccagtt cacttattgt acctgg 1716

<210> 116
<211> 227
<212> PRT
<213> Homo sapiens

<400> 116

Met Asn Ile Phe Leu Leu Asn Leu Leu Thr Glu Glu Val Arg Leu Tyr
1 5 10 15

Ser Cys Thr Pro Arg Asn Phe Ser Val Ser Ile Arg Glu Glu Leu Lys
20 25 30

Arg Thr Asp Thr Ile Phe Trp Pro Gly Cys Leu Leu Val Lys Arg Cys
35 40 45

Gly Gly Asn Cys Ala Cys Cys Leu His Asn Cys Asn Glu Cys Gln Cys
50 55 60

Val Pro Ser Lys Val Thr Lys Lys Tyr His Glu Val Leu Gln Leu Arg
65 70 75 80

Pro Lys Thr Gly Val Arg Gly Leu His Lys Ser Leu Thr Asp Val Ala
85 90 95

Val Ser Gly Asp Cys Thr Asn His Ser Pro Thr Trp Pro Leu Glu His
100 105 110

```
His Glu Glu Cys Asp Cys Val Cys Arg Gly Ser Thr Gly Gly Val Gln
        115                 120                 125

Arg Glu His Arg Arg Ile Ala Ala Ser Pro Pro Ala Ala Leu Ala Trp
    130                 135                 140

Ser Thr Met Arg Ser Val Thr Val Cys Ala Glu Gly Ala Gln Glu Asp
145                 150                 155                 160

Ser Arg Ile Thr Thr Ser Ser Ser Cys Gln Ser Cys Ala Val Gln Trp
                165                 170                 175

Leu Ile Leu Leu Glu Asn Val Cys Val Ile Ser Ile Leu Asn Leu Ser
            180                 185                 190

Cys Leu Leu Gln Pro Glu Leu Cys Ser Ala Val Ala Asp Ser Ile Arg
        195                 200                 205

Glu Arg Met Arg Tyr Leu His Pro Gly Pro Phe Ile Phe Arg Ile Tyr
    210                 215                 220

Ser Ala Phe
225
```

<210> 117
<211> 1134
<212> DNA
<213> Homo sapiens

<400> 117

```
ggatccaaaa tgagcctctt cgggcttctc ctgctgacat ctgccctggc cggccagaga     60

caggggactc aggcggaatc caacctgagt agtaaattcc agttttccag caacaaggaa    120

cagaacggag tacaagatcc tcagcatgag agaattatta ctgtgtctac taatggaagt    180

attcacagcc caaggtttcc tcatacttat ccaagaaata cggtcttggt atggagatta    240

gtagcagtag aggaaaatgt atggatacaa cttacgtttg atgaaagatt tgggcttgaa    300

gacccagaag atgacatatg caagtatgat tttgtagaag ttgaggaacc cagtgatgga    360

actatattag ggcgctggtg tggttctggt actgtaccag gaaaacagat ttctaaagga    420

aatcaaatta ggataagatt tgtatctgat gaatattttc cttctgaacc agggttctgc    480

atccactaca acattgtcat gccacaattc acagaagctg tgagtccttc agtgctaccc    540

ccttcagctt tgccactgga cctgcttaat aatgctataa ctgcctttag taccttggaa    600

gaccttattc gatatcttga accagagaga tggcagttgg acttagaaga tctatatagg    660

ccaacttggc aacttcttgg caaggctttt gtttttggaa gaaaatccag agtggtggat    720

ctgaaccttc taacagagga ggtaagatta tacagctgca cacctcgtaa cttctcagtg    780

tccataaggg aagaactaaa gagaaccgat accatttttct ggccaggttg tctcctggtt    840

aaacgctgtg gtgggaactg tgcctgttgt ctccacaatt gcaatgaatg tcaatgtgtc    900

ccaagcaaag ttactaaaaa ataccacgag gtccttcagt tgagaccaaa gaccggtgtc    960
```

aggggattgc acaaatcact caccgacgtg gccctggagc accatgagga gtgtgactgt 1020

gtgtgcagag ggagcacagg aggatctaga gggcccttcg aaggtaagcc tatccctaac 1080

cctctcctcg gtctcgattc tacgcgtacc ggtcatcatc accatcacca ttga 1134

<210> 118
<211> 374
<212> PRT
<213> Homo sapiens

<400> 118

```
Met Ser Leu Phe Gly Leu Leu Leu Leu Thr Ser Ala Leu Ala Gly Gln
1               5                  10                  15

Arg Gln Gly Thr Gln Ala Glu Ser Asn Leu Ser Ser Lys Phe Gln Phe
            20                  25                  30

Ser Ser Asn Lys Glu Gln Asn Gly Val Gln Asp Pro Gln His Glu Arg
        35                  40                  45

Ile Ile Thr Val Ser Thr Asn Gly Ser Ile His Ser Pro Arg Phe Pro
    50                  55                  60

His Thr Tyr Pro Arg Asn Thr Val Leu Val Trp Arg Leu Val Ala Val
65                  70                  75                  80

Glu Glu Asn Val Trp Ile Gln Leu Thr Phe Asp Glu Arg Phe Gly Leu
                85                  90                  95

Glu Asp Pro Glu Asp Asp Ile Cys Lys Tyr Asp Phe Val Glu Val Glu
            100                 105                 110

Glu Pro Ser Asp Gly Thr Ile Leu Gly Arg Trp Cys Gly Ser Gly Thr
        115                 120                 125

Val Pro Gly Lys Gln Ile Ser Lys Gly Asn Gln Ile Arg Ile Arg Phe
    130                 135                 140

Val Ser Asp Glu Tyr Phe Pro Ser Glu Pro Gly Phe Cys Ile His Tyr
145                 150                 155                 160

Asn Ile Val Met Pro Gln Phe Thr Glu Ala Val Ser Pro Ser Val Leu
                165                 170                 175

Pro Pro Ser Ala Leu Pro Leu Asp Leu Leu Asn Asn Ala Ile Thr Ala
            180                 185                 190

Phe Ser Thr Leu Glu Asp Leu Ile Arg Tyr Leu Glu Pro Glu Arg Trp
        195                 200                 205

Gln Leu Asp Leu Glu Asp Leu Tyr Arg Pro Thr Trp Gln Leu Leu Gly
    210                 215                 220

Lys Ala Phe Val Phe Gly Arg Lys Ser Arg Val Val Asp Leu Asn Leu
225                 230                 235                 240

Leu Thr Glu Glu Val Arg Leu Tyr Ser Cys Thr Pro Arg Asn Phe Ser
                245                 250                 255
```

```
Val Ser Ile Arg Glu Glu Leu Lys Arg Thr Asp Thr Ile Phe Trp Pro
            260                 265                 270

Gly Cys Leu Leu Val Lys Arg Cys Gly Gly Asn Cys Ala Cys Cys Leu
        275                 280                 285

His Asn Cys Asn Glu Cys Gln Cys Val Pro Ser Lys Val Thr Lys Lys
    290                 295                 300

Tyr His Glu Val Leu Gln Leu Arg Pro Lys Thr Gly Val Arg Gly Leu
305                 310                 315                 320

His Lys Ser Leu Thr Asp Val Ala Leu Glu His His Glu Glu Cys Asp
                325                 330                 335

Cys Val Cys Arg Gly Ser Thr Gly Gly Ser Arg Gly Pro Phe Glu Gly
            340                 345                 350

Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser Thr Arg Thr Gly
        355                 360                 365

His His His His His His
    370
```

<210> 119
<211> 1134
<212> DNA
<213> Homo sapiens

<400> 119

```
gaattcaaag gcctgtattt tactgttttc gtaacagttt tgtaataaaa aaacctataa     60

atatgaaatt cttagtcaac gttgcccttg tttttatggt cgtatacatt tcttacatct    120

atgcggatcc ggagtctcac catcaccacc atcatgaatc caacctgagt agtaaattcc    180

agttttccag caacaaggaa cagaacggag tacaagatcc tcagcatgag agaattatta    240

ctgtgtctac taatggaagt attcacagcc caaggtttcc tcatacttat ccaagaaata    300

cggtcttggt atggagatta gtagcagtag aggaaaatgt atggatacaa cttacgtttg    360

atgaaagatt tgggcttgaa gacccagaag atgacatatg caagtatgat tttgtagaag    420

ttgaggaacc cagtgatgga actatattag ggcgctggtg tggttctggt actgtaccag    480

gaaaacagat ttctaaagga aatcaaatta ggataagatt tgtatctgat gaatattttc    540

cttctgaacc agggttctgc atccactaca acattgtcat gccacaattc acagaagctg    600

tgagtccttc agtgctaccc ccttcagctt tgccactgga cctgcttaat aatgctataa    660

ctgcctttag taccttggaa gaccttattc gatatcttga accagagaga tggcagttgg    720

acttagaaga tctatatagg ccaacttggc aacttcttgg caaggctttt gtttttggaa    780

gaaaatccag agtggtggat ctgaaccttc taacagagga ggtaagatta tacagctgca    840

cacctcgtaa cttctcagtg tccataaggg aagaactaaa gagaaccgat accattttct    900

ggccaggttg tctcctggtt aaacgctgtg gtgggaactg tgcctgttgt ctccacaatt    960
```

gcaatgaatg tcaatgtgtc ccaagcaaag ttactaaaaa ataccacgag gtccttcagt 1020

tgagaccaaa gaccggtgtc aggggattgc acaaatcact caccgacgtg gccctggagc 1080

accatgagga gtgtgactgt gtgtgcagag ggagcacagg aggatagctc taga 1134

<210> 120
<211> 354
<212> PRT
<213> Homo sapiens

<400> 120

```
Met Lys Phe Leu Val Asn Val Ala Leu Val Phe Met Val Val Tyr Ile
1               5                  10                  15

Ser Tyr Ile Tyr Ala Asp Pro Glu Ser His His His His His His Glu
            20                  25                  30

Ser Asn Leu Ser Ser Lys Phe Gln Phe Ser Ser Asn Lys Glu Gln Asn
        35                  40                  45

Gly Val Gln Asp Pro Gln His Glu Arg Ile Ile Thr Val Ser Thr Asn
    50                  55                  60

Gly Ser Ile His Ser Pro Arg Phe Pro His Thr Tyr Pro Arg Asn Thr
65                  70                  75                  80

Val Leu Val Trp Arg Leu Val Ala Val Glu Glu Asn Val Trp Ile Gln
                85                  90                  95

Leu Thr Phe Asp Glu Arg Phe Gly Leu Glu Asp Pro Glu Asp Asp Ile
            100                 105                 110

Cys Lys Tyr Asp Phe Val Glu Val Glu Glu Pro Ser Asp Gly Thr Ile
        115                 120                 125

Leu Gly Arg Trp Cys Gly Ser Gly Thr Val Pro Gly Lys Gln Ile Ser
    130                 135                 140

Lys Gly Asn Gln Ile Arg Ile Arg Phe Val Ser Asp Glu Tyr Phe Pro
145                 150                 155                 160

Ser Glu Pro Gly Phe Cys Ile His Tyr Asn Ile Val Met Pro Gln Phe
                165                 170                 175

Thr Glu Ala Val Ser Pro Ser Val Leu Pro Pro Ser Ala Leu Pro Leu
            180                 185                 190

Asp Leu Leu Asn Asn Ala Ile Thr Ala Phe Ser Thr Leu Glu Asp Leu
        195                 200                 205

Ile Arg Tyr Leu Glu Pro Glu Arg Trp Gln Leu Asp Leu Glu Asp Leu
    210                 215                 220

Tyr Arg Pro Thr Trp Gln Leu Leu Gly Lys Ala Phe Val Phe Gly Arg
225                 230                 235                 240

Lys Ser Arg Val Val Asp Leu Asn Leu Leu Thr Glu Glu Val Arg Leu
                245                 250                 255
```

```
Tyr Ser Cys Thr Pro Arg Asn Phe Ser Val Ser Ile Arg Glu Glu Leu
            260                 265                 270

Lys Arg Thr Asp Thr Ile Phe Trp Pro Gly Cys Leu Leu Val Lys Arg
        275                 280                 285

Cys Gly Gly Asn Cys Ala Cys Cys Leu His Asn Cys Asn Glu Cys Gln
    290                 295                 300

Cys Val Pro Ser Lys Val Thr Lys Lys Tyr His Glu Val Leu Gln Leu
305                 310                 315                 320

Arg Pro Lys Thr Gly Val Arg Gly Leu His Lys Ser Leu Thr Asp Val
                325                 330                 335

Ala Leu Glu His His Glu Glu Cys Asp Cys Val Cys Arg Gly Ser Thr
            340                 345                 350

Gly Gly
```

<210> 121
<211> 1097
<212> DNA
<213> Homo sapiens

<400> 121

```
cgcagactaa ttcgagctcg aacaacaaca acaataacaa taacaacaac ctcgggatcg     60

gagggaagga tttcagaatt cgaatccaac ctgagtagta aattccagtt ttccagcaac    120

aaggaacaga acggagtaca agatcctcag catgagagaa ttattactgt gtctactaat    180

ggaagtattc acagcccaag gtttcctcat acttatccaa gaaatacggt cttggtatgg    240

agattagtag cagtagagga aaatgtatgg atacaactta cgtttgatga aagatttggg    300

cttgaagacc cagaagatga catatgcaag tatgattttg tagaagttga ggaacccagt    360

gatggaacta tattagggcg ctggtgtggt tctggtactg taccaggaaa acagatttct    420

aaaggaaatc aaattaggat aagatttgta tctgatgaat attttccttc tgaaccaggg    480

ttctgcatcc actacaacat tgtcatgcca caattcacag aagctgtgag tccttcagtg    540

ctacccccct cagctttgcc actggacctg cttaataatg ctataactgc ctttagtacc    600

ttggaagacc ttattcgata tcttgaacca gagagatggc agttggactt agaagatcta    660

tataggccaa cttggcaact tcttggcaag gcttttgttt ttggaagaaa atccagagtg    720

gtggatctga accttctaac agaggaggta agattataca gctgcacacc tcgtaacttc    780

tcagtgtcca taagggaaga actaaagaga accgatacca ttttctggcc aggttgtctc    840

ctggttaaac gctgtggtgg gaactgtgcc tgttgtctcc acaattgcaa tgaatgtcaa    900

tgtgtcccaa gcaaagttac taaaaaatac cacgaggtcc ttcagttgag accaaagacc    960

ggtgtcaggg gattgcacaa atcactcacc gacgtggccc tggagcacca tgaggagtgt   1020
```

gactgtgtgt gcagagggag cacaggagga catcatcacc atcaccattg atctagagtc 1080

gacctgcagg caagctt 1097

<210> 122
<211> 355
<212> PRT
<213> Homo sapiens

<400> 122

```
Gln Thr Asn Ser Ser Ser Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn
1               5                  10                  15

Leu Gly Ile Glu Gly Arg Ile Ser Glu Phe Glu Ser Asn Leu Ser Ser
            20                  25                  30

Lys Phe Gln Phe Ser Ser Asn Lys Glu Gln Asn Gly Val Gln Asp Pro
        35                  40                  45

Gln His Glu Arg Ile Ile Thr Val Ser Thr Asn Gly Ser Ile His Ser
    50                  55                  60

Pro Arg Phe Pro His Thr Tyr Pro Arg Asn Thr Val Leu Val Trp Arg
65                  70                  75                  80

Leu Val Ala Val Glu Glu Asn Val Trp Ile Gln Leu Thr Phe Asp Glu
                85                  90                  95

Arg Phe Gly Leu Glu Asp Pro Glu Asp Asp Ile Cys Lys Tyr Asp Phe
            100                 105                 110

Val Glu Val Glu Glu Pro Ser Asp Gly Thr Ile Leu Gly Arg Trp Cys
        115                 120                 125

Gly Ser Gly Thr Val Pro Gly Lys Gln Ile Ser Lys Gly Asn Gln Ile
    130                 135                 140

Arg Ile Arg Phe Val Ser Asp Glu Tyr Phe Pro Ser Glu Pro Gly Phe
145                 150                 155                 160

Cys Ile His Tyr Asn Ile Val Met Pro Gln Phe Thr Glu Ala Val Ser
                165                 170                 175

Pro Ser Val Leu Pro Pro Ser Ala Leu Pro Leu Asp Leu Leu Asn Asn
            180                 185                 190

Ala Ile Thr Ala Phe Ser Thr Leu Glu Asp Leu Ile Arg Tyr Leu Glu
        195                 200                 205

Pro Glu Arg Trp Gln Leu Asp Leu Glu Asp Leu Tyr Arg Pro Thr Trp
    210                 215                 220

Gln Leu Leu Gly Lys Ala Phe Val Phe Gly Arg Lys Ser Arg Val Val
225                 230                 235                 240

Asp Leu Asn Leu Leu Thr Glu Glu Val Arg Leu Tyr Ser Cys Thr Pro
                245                 250                 255

Arg Asn Phe Ser Val Ser Ile Arg Glu Glu Leu Lys Arg Thr Asp Thr
            260                 265                 270
```

```
Ile Phe Trp Pro Gly Cys Leu Leu Val Lys Arg Cys Gly Gly Asn Cys
        275                 280                 285

Ala Cys Cys Leu His Asn Cys Asn Glu Cys Gln Cys Val Pro Ser Lys
    290                 295                 300

Val Thr Lys Lys Tyr His Glu Val Leu Gln Leu Arg Pro Lys Thr Gly
305                 310                 315                 320

Val Arg Gly Leu His Lys Ser Leu Thr Asp Val Ala Leu Glu His His
                325                 330                 335

Glu Glu Cys Asp Cys Val Cys Arg Gly Ser Thr Gly Gly His His His
            340                 345                 350

His His His
        355
```

<210> 123
<211> 500
<212> DNA
<213> Homo sapiens

<400> 123

```
aaggagatat acatatgcgg ggttctcatc atcatcatca tcatggtatg gctagcatga     60

ctggtggaca gcaaatgggt cgggatctgt acgacgatga cgataaggat ccgggaagaa    120

aatccagagt ggtggatctg aaccttctaa cagaggaggt aagattatac agctgcacac    180

ctcgtaactt ctcagtgtcc ataagggaag aactaaagag aaccgatacc attttctggc    240

caggttgtct cctggttaaa cgctgtggtg ggaactgtgc ctgttgtctc cacaattgca    300

atgaatgtca atgtgtccca agcaaagtta ctaaaaaata ccacgaggtc cttcagttga    360

gaccaaagac cggtgtcagg ggattgcaca aatcactcac cgacgtggcc ctggagcacc    420

atgaggagtg tgactgtgtg tgcagaggga gcacaggagg ataatgaatt cgaagcttga    480

tccggctgct aacaaagccc                                               500
```

<210> 124
<211> 149
<212> PRT
<213> Homo sapiens

<400> 124

```
Met Arg Gly Ser His His His His His His Gly Met Ala Ser Met Thr
1               5                   10                  15

Gly Gly Gln Gln Met Gly Arg Asp Leu Tyr Asp Asp Asp Asp Lys Asp
            20                  25                  30
Pro Gly Arg Lys Ser Arg Val Val Asp Leu Asn Leu Leu Thr Glu Glu
        35                  40                  45

Val Arg Leu Tyr Ser Cys Thr Pro Arg Asn Phe Ser Val Ser Ile Arg
    50                  55                  60
```

```
Glu Glu Leu Lys Arg Thr Asp Thr Ile Phe Trp Pro Gly Cys Leu Leu
65                  70                  75                  80

Val Lys Arg Cys Gly Gly Asn Cys Ala Cys Cys Leu His Asn Cys Asn
                85                  90                  95

Glu Cys Gln Cys Val Pro Ser Lys Val Thr Lys Lys Tyr His Glu Val
            100                 105                 110

Leu Gln Leu Arg Pro Lys Thr Gly Val Arg Gly Leu His Lys Ser Leu
        115                 120                 125

Thr Asp Val Ala Leu Glu His His Glu Glu Cys Asp Cys Val Cys Arg
    130                 135                 140

Gly Ser Thr Gly Gly
145
```

<210> 125
<211> 550
<212> DNA
<213> Homo sapiens

<400> 125

```
ggcgatggcc atggatatcg gaattaattc ggatccggag tctcaccatc accaccatca     60

tgaatccaac ctgagtagta aattccagtt ttccagcaac aaggaacaga acggagtaca    120

agatcctcag catgagagaa ttattactgt gtctactaat ggaagtattc acagcccaag    180

gtttcctcat acttatccaa gaaatacggt cttggtatgg agattagtag cagtagagga    240

aaatgtatgg atacaactta cgtttgatga aagatttggg cttgaagacc cagaagatga    300

catatgcaag tatgattttg tagaagttga ggaacccagt gatggaacta tattagggcg    360

ctggtgtggt tctggtactg taccaggaaa acagatttct aaaggaaatc aaattaggat    420

aagatttgta tctgatgaat attttccttc tgaaccaggg ttctgcatcc actacaacat    480

tgtcatgcca caattcacag aagctgtgta gtcgagctcc gtcgacaagc ttgcggccgc    540

actcgagcac                                                           550
```

<210> 126
<211> 168
<212> PRT
<213> Homo sapiens

<400> 126

```
Met Ala Met Asp Ile Gly Ile Asn Ser Asp Pro Glu Ser His His His
1               5                   10                  15

His His His Glu Ser Asn Leu Ser Ser Lys Phe Gln Phe Ser Ser Asn
            20                  25                  30

Lys Glu Gln Asn Gly Val Gln Asp Pro Gln His Glu Arg Ile Ile Thr
        35                  40                  45
```

Val Ser Thr Asn Gly Ser Ile His Ser Pro Arg Phe Pro His Thr Tyr
50 55 60

Pro Arg Asn Thr Val Leu Val Trp Arg Leu Val Ala Val Glu Glu Asn
65 70 75 80

Val Trp Ile Gln Leu Thr Phe Asp Glu Arg Phe Gly Leu Glu Asp Pro
85 90 95

Glu Asp Asp Ile Cys Lys Tyr Asp Phe Val Glu Val Glu Glu Pro Ser
100 105 110

Asp Gly Thr Ile Leu Gly Arg Trp Cys Gly Ser Gly Thr Val Pro Gly
115 120 125

Lys Gln Ile Ser Lys Gly Asn Gln Ile Arg Ile Arg Phe Val Ser Asp
130 135 140

Glu Tyr Phe Pro Ser Glu Pro Gly Phe Cys Ile His Tyr Asn Ile Val
145 150 155 160

Met Pro Gln Phe Thr Glu Ala Val
165

<210> 127
<211> 542
<212> DNA
<213> Homo sapiens

<400> 127
tttcttttat accatatagt ggtggatctg aaccagggtt ctgcatccac tacaacattg 60

tcatgccaca attcacagaa gctgtgagtc cttcagtgct acccccttca gctttgccac 120

tggacctgct taataatgct ataactgcct ttagtacctt ggaagacctt attcgatatc 180

ttgaaccaga gagatggcag ttggacttag aagatctata taggccaact tggcaacttc 240

ttggcaaggc ttttgttttt ggaagaaaat ccagagtggt ggatctgaac cttctaacag 300

aggaggtaag attatacagc tgcacacctc gtaacttctc agtgtccata agggaagaac 360

taaagagaac cgataccatt ttctggccag gttgtctcct ggttaaacgc tgtggtggga 420

actgtgcctg ttgtctccac aattgcaatg aatgtcaatg tgtcccaagc aaagttacta 480

aaaaatacca cgaggtaggt atacaatttt ctttttggtt tccttcgggt attttatgtc 540

tt 542

<210> 128
<211> 1710
<212> DNA
<213> Homo sapiens

<400> 128
aaagccagtc atagacattc gttgattttt aaaagtggct tactcttatt ccctttcagg 60

tccttcagtt gagaccaaag accggtgtca ggggattgca caaatcactc accgacgtgg 120

ccctggagca ccatgaggag tgtgactgtg tgtgcagagg gagcacagga ggatagccgc 180

atcaccacca gcagctcttg cccagagctg tgcagtgcag tggctgattc tattagagaa 240

cgtatgcgtt atctccatcc ttaatctcag ttgtttgctt caaggacctt tcatcttcag 300

gatttacagt gcattctgaa agaggagaca tcaaacagaa ttaggagttg tgcaacagct 360

cttttgagag gaggcctaaa ggacaggaga aaaggtcttc aatcgtggaa agaaaattaa 420

atgttgtatt aaatagatca ccagctagtt tcagagttac catgtacgta ttccactagc 480

tgggttctgt atttcagttc tttcgatacg gcttagggta atgtcagtac aggaaaaaaa 540

ctgtgcaagt gagcacctga ttccgttgcc ttggcttaac tctaaagctc catgtcctgg 600

gcctaaaatc gtataaaatc tggatttttt ttttttttt tgcgcatatt cacatatgta 660

aaccagaaca ttctatgtac tacaaacctg gtttttaaaa aggaactatg ttgctatgaa 720

ttaaacttgt gtcatgctga taggacagac tggatttttc atatttctta ttaaaatttc 780

tgccatttag aagaagagaa ctacattcat ggtttggaag agataaacct gaaaagaaga 840

gtggccttat cttcacttta tcgataagtc agtttatttg tttcattgtg tacattttta 900

tattctcctt ttgacattat aactgttggc ttttctaatc ttgttaaata tatctatttt 960

taccaaaggt atttaatatt ctttttttatg acaacttaga tcaactattt ttagcttggt 1020

aaatttttct aaacacaatt gttatagcca gaggaacaaa gatgatataa aatattgttg 1080

ctctgacaaa aatacatgta tttcattctc gtatggtgct agagttagat taatctgcat 1140

tttaaaaaac tgaattggaa tagaattggt aagttgcaaa gacttttga aaataattaa 1200

attatcatat cttccattcc tgttattgga gatgaaaata aaaagcaact tatgaaagta 1260

gacattcaga tccagccatt actaacctat tccttttttg gggaaatctg agcctagctc 1320

agaaaaacat aaagcacctt gaaaaagact tggcagcttc ctgataaagc gtgctgtgct 1380

gtgcagtagg aacacatcct atttattgtg atgttgtggt tttattatct taaactctgt 1440

tccatacact tgtataaata catggatatt tttatgtaca gaagtatgtc tcttaaccag 1500

ttcacttatt gtactctggc aatttaaaag aaaatcagta aaatattttg cttgtaaaat 1560

gcttaatatc gtgcctaggt tatgtggtga ctatttgaat caaaaatgta ttgaatcatc 1620

aaataaaaga atgtggctat tttggggaga aaattatgtg tgtgtgtgct caagatttat 1680

ttcttggact ctgagaaaat gaaagataaa 1710

<210> 129
<211> 2668
<212> DNA
<213> Homo sapiens

<400> 129
gaattcgccc ttttgtttaa accttgggaa ctggttcagg tccaggtttt gctttgatcc 60

ttttcaaaaa ctggagacac agaagagggc tctaggaaaa agttttggat gggattatgt 120

ggaaactacc ctgcgattct ctgctgccag agcaggctcg gcgcttccac cccagtgcag 180

ccttcccctg gcggtggtga aagagactcg ggagtcgctg cttccaaagt gcccgccgtg 240

agtgagctct caccccagtc agccaaatga gcctcttcgg gcttctcctg ctgacatctg 300

ccctggccgg ccagagacag gggactcagg cggaatccaa cctgagtagt aaattccagt 360

tttccagcaa caaggaacag aacggagtac aagatcctca gcatgagaga attattactg 420

tgtctactaa tggaagtatt cacagcccaa ggtttcctca tacttatcca agaaatacgg 480

tcttggtatg gagattagta gcagtagagg aaaatgtatg gatacaactt acgtttgatg 540

aaagatttgg gcttgaagac ccagaagatg acatatgcaa gtatgatttt gtagaagttg 600

aggaacccag tgatggaact atattagggc gctggtgtgg ttctggtact gtaccaggaa 660

aacagatttc taaaggaaat caaattagga taagatttgt atctgatgaa tattttcctt 720

ctgaaccagg gttctgcatc cactacaaca ttgtcatgcc acaattcaca gaagctgtga 780

gtccttcagt gctacccccc tcagctttgc cactggacct gcttaataat gctataactg 840

cctttagtac cttggaagac cttattcgat atcttgaacc agagagatgg cagttggact 900

tagaagatct atataggcca acttggcaac ttcttggcaa ggcttttgtt tttggaagaa 960

aatccagagt ggtggatctg aaccttctaa cagaggaggt aagattatac agctgcacac 1020

ctcgtaactt ctcagtgtcc ataagggaag aactaaagag aaccgatacc attttctggc 1080

caggttgtct cctggttaaa cgctgtggtg ggaactgtgc ctgttgtctc cacaattgca 1140

atgaatgtca atgtgtccca agcaaagtta ctaaaaaata ccacgaggtc cttcagttga 1200

gaccaaagac cggtgtcagg ggattgcaca aatcactcac cgacgtggcc ctggagcacc 1260

atgaggagtg tgactgtgtg tgcagaggga gcacaggagg atagccgcat caccaccagc 1320

agctcttgcc cagagctgtg cagtgcagtg gctgattcta ttagagaacg tatgcgttat 1380

ctccatcctt aatctcagtt gtttgcttca aggacctttc atcttcagga tttacagtgc 1440

attctgaaag aggagacatc aaacagaatt aggagttgtg caacagctct tttgagagga 1500

ggcctaaagg acaggagaaa aggtcttcaa tcgtggaaag aaaattaaat gttgtattaa 1560

atagatcacc agctagtttc agagttacca tgtacgtatt ccactagctg ggttctgtat 1620

ttcagttctt tcgatacggc ttagggtaat gtcagtacag gaaaaaaact gtgcaagtga 1680

gcacctgatt ccgttgcctt gcttaactct aaagctccat gtcctgggcc taaaatcgta 1740

taaaatctgg attttttttt ttttttttg ctcatattca catatgtaaa ccagaacatt 1800

ctatgtacta caaacctggt ttttaaaaag gaactatgtt gctatgaatt aaacttgtgt 1860

catgctgata ggacagactg gatttttcat atttcttatt aaaatttctg ccatttagaa 1920

gaagagaact acattcatgg tttggaagag ataaacctga aaagaagagt ggccttatct 1980

tcactttatc gataagtcag tttatttgtt tcattgtgta cattttata ttctcctttt 2040

gacattataa ctgttggctt ttctaatctt gttaaatata tctattttta ccaaaggtat 2100

ttaatattct tttttatgac aacttagatc aactattttt agcttggtaa atttttctaa 2160

acacaattgt tatagccaga ggaacaaaga tgatataaaa tattgttgct ctgacaaaaa 2220

tacatgtatt tcattctcgt atggtgctag agttagatta atctgcattt taaaaaactg 2280

aattggaata gaattggtaa gttgcaaaga ctttttgaaa ataattaaat tatcatatct 2340

tccattcctg ttattggaga tgaaaataaa aagcaactta tgaaagtaga cattcagatc 2400

cagccattac taacctattc ctttttttggg gaaatctgag cctagctcag aaaaacataa 2460

agcaccttga aaaagacttg gcagcttcct gataaagcgt gctgtgctgt gcagtaggaa 2520

cacatcctat ttattgtgat gttgtggttt tattatctta aactctgttc catacacttg 2580

tataaataca tggatatttt tatgtacaga agtatgtctc ttaaccagtt cacttattgt 2640

acctggaagg gcgaattctg cagatatc 2668

<210> 130
<211> 345
<212> PRT
<213> Homo sapiens

<400> 130

Met Ser Leu Phe Gly Leu Leu Leu Leu Thr Ser Ala Leu Ala Gly Gln
1 5 10 15

Arg Gln Gly Thr Gln Ala Glu Ser Asn Leu Ser Ser Lys Phe Gln Phe
20 25 30

Ser Ser Asn Lys Glu Gln Asn Gly Val Gln Asp Pro Gln His Glu Arg
35 40 45

Ile Ile Thr Val Ser Thr Asn Gly Ser Ile His Ser Pro Arg Phe Pro
50 55 60

His Thr Tyr Pro Arg Asn Thr Val Leu Val Trp Arg Leu Val Ala Val
65 70 75 80

Glu Glu Asn Val Trp Ile Gln Leu Thr Phe Asp Glu Arg Phe Gly Leu
85 90 95

Glu Asp Pro Glu Asp Asp Ile Cys Lys Tyr Asp Phe Val Glu Val Glu
100 105 110

Glu Pro Ser Asp Gly Thr Ile Leu Gly Arg Trp Cys Gly Ser Gly Thr
115 120 125

Val Pro Gly Lys Gln Ile Ser Lys Gly Asn Gln Ile Arg Ile Arg Phe
130 135 140

```
Val Ser Asp Glu Tyr Phe Pro Ser Glu Pro Gly Phe Cys Ile His Tyr
145                 150                 155                 160

Asn Ile Val Met Pro Gln Phe Thr Glu Ala Val Ser Pro Ser Val Leu
                165                 170                 175

Pro Pro Ser Ala Leu Pro Leu Asp Leu Leu Asn Asn Ala Ile Thr Ala
            180                 185                 190

Phe Ser Thr Leu Glu Asp Leu Ile Arg Tyr Leu Glu Pro Glu Arg Trp
        195                 200                 205

Gln Leu Asp Leu Glu Asp Leu Tyr Arg Pro Thr Trp Gln Leu Leu Gly
    210                 215                 220

Lys Ala Phe Val Phe Gly Arg Lys Ser Arg Val Val Asp Leu Asn Leu
225                 230                 235                 240

Leu Thr Glu Glu Val Arg Leu Tyr Ser Cys Thr Pro Arg Asn Phe Ser
                245                 250                 255

Val Ser Ile Arg Glu Glu Leu Lys Arg Thr Asp Thr Ile Phe Trp Pro
            260                 265                 270

Gly Cys Leu Leu Val Lys Arg Cys Gly Gly Asn Cys Ala Cys Cys Leu
        275                 280                 285

His Asn Cys Asn Glu Cys Gln Cys Val Pro Ser Lys Val Thr Lys Lys
    290                 295                 300

Tyr His Glu Val Leu Gln Leu Arg Pro Lys Thr Gly Val Arg Gly Leu
305                 310                 315                 320

His Lys Ser Leu Thr Asp Val Ala Leu Glu His His Glu Glu Cys Asp
                325                 330                 335

Cys Val Cys Arg Gly Ser Thr Gly Gly
            340                 345
```